

MAR/FY06

FORT CAMPBELL

Kentucky

**Army Defense Environmental
Restoration Program
Installation Action Plan**

Final 12 September 2006

Table of Contents

Table of Contents	1
Statement of Purpose	2
Acronyms	3
 Installation Information	6
Cleanup Program Summary	8
 Installation Restoration Program	10
Summary.....	11
Contamination Assessment	13
Previous Studies	16
IRP Active Sites	32
AEDB-R Site: FCPB-07 Pesticide Mixing and Storage Facility	33
AEDB-R Site: FCPB-09 NBC Fire Training Area	34
AEDB-R Site: FCPB-10 Old OB/OD Area	35
AEDB-R Site: FCPB-24 Wastewater Sludge Dump.....	36
AEDB-R Site: FCPB-26 Sanitary Landfills 2 & 4	37
AEDB-R Site: FCPB-38 Campbell Army Airfield	38
AEDB-R Site: FCPB-43 Clarksville Base Chromium Plating Shop	41
AEDB-R Site: FCPB-48 Old Skeet Range	43
AEDB-R Site: FCPB-49 Blivet Repair Area Bldg.....	44
AEDB-R Site: FCPB-52 Oil Pits	45
AEDB-R Site: FCPB-58 Demolition Area 18.....	46
AEDB-R Site: FCPB-64 Lube Racks	47
AEDB-R Site: FCPB-65 Former Skeet Range	48
IRP No Further Action Site Summary	49
 IRP Schedule	52
IRP Costs	56
 Military Munitions Response Program	57
Summary.....	58
Contamination Assessment	59
MMRP Active Sites	61
FCPB-001-R-01: 18 th Street Confidence Course.....	62
FCPB-002-R-01: Lucas Elementary School DMM Site	63
FCPB-003-R-01: Mortar Range 6/11.....	64
FCPB-004-R-01: Range 28.....	65
FCPB-005-R-01: Range 42.....	66
FCPB-006-R-01: Training Range 1 & 1A	67
FCPB 007-R-01: Werner Park Housing Area DMM Site	68
 MMRP Schedule	69
MMRP Costs	70
Community Involvement	71

Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multi-year Cleanup Program for an installation. The plan identifies environmental cleanup requirements at each site or area of concern, and proposes a comprehensive, installation-wide approach, with associated costs and schedules, to conduct investigations and necessary remedial actions.

In an effort to coordinate planning information between the restoration manager, US Army Environmental Center (USAEC), Ft. Campbell, executing agencies, regulatory agencies, and the public, an IAP was completed. The IAP is used to track requirements, schedules, and tentative budgets for all major Army installation cleanup programs.

All site-specific funding and schedule information has been prepared according to projected overall Army funding levels and is, therefore, subject to change.

The following agencies contributed to the formulation and completion of this Installation Action Plan at the IAP Workshop held April 11-13, 2006:

Engineering & Environment, Inc. for Ft. Campbell Env. Div.
Engineering and Environment, Inc. for USAEC
Ft. Campbell Environmental Division
IMA-SERO
JM Waller for Ft. Campbell Environmental Division
Kentucky Department of Environmental Protection (KDEP)
Restoration Advisory Board
Tennessee Department of Environment and Conservation (TDEC)
US Army Corps of Engineers, Nashville
US Army Environmental Center

Acronyms & Abbreviations

AEDB-R	Army Environmental Database - Restoration
AOC	Area of Concern
BRAC	Base Realignment and Closure
CAAF	Campbell Army Airfield
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CMI	Corrective Measures Implementation
CMI(C)	Corrective Measures Implementation (Construction)
CMI(O)	Corrective Measures Implementation (Operation)
CMS	Corrective Measures Study
COE	Corps of Engineers
CS	Confirmatory Sampling
CTC	Cost to complete
cy	cubic yards
DA	Department of the Army
DD	Decision Document
DERA	Defense Environmental Restoration Account
DERP	Defense Environmental Restoration Program
DMM	Discarded Military Munitions
DoD	Department of Defense
DPW	Directorate of Public Works
DRMO	Defense Reutilization and Marketing Office
DS2	decontamination agent
DSERTS	Defense Site Environmental Restoration Tracking System
EPA	United States Environmental Protection Agency
ER,A	Environmental Restoration, Army
FCPB	AEDB-R Code for Ft. Campbell
FS	Feasibility Study
FTC	Ft. Campbell
FY	Fiscal Year
GW	groundwater
HMX	type of explosive
HRC	Hydrogen Releasing Compound
HW	Hazardous Waste
IAP	Installation Action Plan
IMA	Installation Management Agency
IRA	Interim Remedial Action
IRP	Installation Restoration Program
JP-4	Jet Propellant Number Four
JP-8	Jet Propellant Number Eight
KNREPC	Kentucky Natural Resources and Environmental Protection Cabinet
KDEP	Kentucky Department of Environmental Protection
KY	Kentucky
LTM	Long-Term Management
MC	Munitions Constituents

Acronyms & Abbreviations

MCL	Maximum Contaminant Level
MMRP	Military Munitions Response Program
NBC	Nuclear, Biological and Chemical
NFA	No Further Action
NG	National Guard
NPL	National Priorities List
NRC	Nuclear Regulatory Commission
OB/OD	Open Burning/Open Detonation
OMA	Operations and Maintenance - Army
ORC	Oxygen Releasing Compound
OWS	Oil and Water Separator
PA	Preliminary Assessment
PCB	Polychlorinated Biphenyls
PMC	Profession Management Corp. Inc.
PNNL	Pacific Northwest National Laboratory
ppb	parts per billion
POL	Petroleum, Oil and Lubricants
POM	Program Objective Memorandum
PY	Prior Year
RA	Remedial Action
RAB	Restoration Advisory Board
RA(C)	Remedial Action (Construction)
RA(O)	Remedial Action (Operation)
RAS	Risk Assessment Strategy Document
RBSL	Risk-Based Screening Level
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RDX	kind of explosive
REM	Removal
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI	Remedial Investigation
RIP	Remedy in Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
S/A	Supervision and Administration
S/R	Supervision and Remediation
SERO	Southeast Regional Office
SI	Site Inspection
STEP	Solutions to Environmental Problems, Inc.
SVE	Soil Vapor Extraction
SVOC	Semi-Volatile Organic Compounds
SWMU	Solid Waste Management Unit
SWMUG	Solid Waste Management Unit Group

Acronyms & Abbreviations

TAAP	Technical Assistance for Public Participants
TCE	Trichloroethylene
TDEC	Tennessee Department of Environment and Conservation
TN	Tennessee
TPH	Total Petroleum Hydrocarbons
TRC	Technical Review Committee
UFSS	Underground Fuel Storage System
USACE	United States Army Corps of Engineers
USACHPPM	United States Army Center for Health Promotion and Preventive Medicine
USAEC	United States Army Environmental Center
USAEHA	United States Army Environmental Hygiene Agency (now known as USACHPPM)
USAR	United States Army Reserve
USATHMA	United States Army Toxic and Hazardous Material Agency (now known as USAEC)
USGS	United States Geological Society
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VOC	Volatile Organic Compounds

Installation Locale: Ft. Campbell is located in southwestern Kentucky and north-central Tennessee in portions of four counties; Montgomery and Stewart Counties in Tennessee and Christian and Trigg Counties in Kentucky. The installation is approximately eight miles north of Clarksville, Tennessee and seventeen miles south of Hopkinsville, Kentucky. The installation is comprised of approximately 105,347 total acres of land, approximately two-thirds of the acreage is located in Tennessee with the remainder in Kentucky. The built-up area in Montgomery and Christian Counties consists of 14,000 acres along the eastern boundary of the reservation adjacent to US Highway 41-A.

Installation Mission: Ft. Campbell is an active Installation Management Agency (IMA) installation. Approximately 30,000 military and civilian personnel and 4,000 US Army Reserve (USAR) personnel currently further the mission of FTC, namely, “to support and train the 101st Airborne Division (Air Assault), the 5th Special Forces Group and other units located on the installation in preparation for a variety of assigned combat and combat-related missions.”

This mission includes the support and training of USAR and the National Guard (NG). A secondary mission includes providing medical and dental care for active duty military, their dependents, and retired military personnel. An additional mission is to train noncommissioned officers in specialties in the fundamentals of leadership. Critical to the military operation are provisions for the safety and security of all personnel.

Lead Organization: Installation Management Agency, Southeast Region

Lead Executing Agency: US Army Corps of Engineers, Nashville District

Regulatory Participation

Federal:

US Environmental Protection Agency, Region IV

State:

- Kentucky Department of Environmental Protection (KDEP)
- Tennessee Department of Environment and Conservation (TDEC)

NPL STATUS:

No NPL sites have been identified at Ft. Campbell

Installation Restoration Advisory Board (RAB)/Technical Review Committee (TRC)/Technical Assistance for Public Participation (TAPP) Status: RAB established 1996 – meeting on a quarterly basis

Installation Program Summaries:

IRP

Contaminants of Concern: Metals, VOCs, SVOCs, POLs, Explosive Residues, Pesticides.

Media of Concern: Soil, Groundwater

Estimated date for RIP/RC: 2011/2014

Funding to Date (up to FY05): \$40,849,710

Current Year Funding (FY06): \$623,264

Cost to Complete (FY07+): \$12,149,000

MMRP

Contaminants of Concern: MEC, DMM, and MC

Media of Concern: Soil, Sediment, Groundwater, and Surface Water

Estimated date for RIP/RC: 2017/2017

Funding to Date (up to FY05): \$25,000

Current Year Funding (FY06): \$329,000

Cost to Complete (FY07+): \$13,470,000

BRAC

There are no BRAC sites at Ft. Campbell

Cleanup Program Summary

Installation Historic Activity: Camp Campbell was officially commissioned on March 6, 1942 as a major armor training and mobilization center for the World War II effort. It became the training ground for the 12th, 14th and 20th Armored Divisions; Headquarters IV Armored Corps; and the 26th Infantry Division. The post also served as a Prisoner of War camp during the war, and over 4,000 German soldiers were incarcerated at Camp Campbell.

The 11th Airborne Division, the “Angels” of World War II, was reactivated and headquartered at Camp Campbell from May 1949 to January 1956, at which time it was replaced by the 101st Airborne Division, the famed “Screaming Eagles.”

On January 1, 1959, Campbell Army Airfield (CAAF) was transferred from the US Air Force to the Army, becoming the Army’s largest airfield.

On April 14, 1959, Camp Campbell was re-designated Ft. Campbell and became a permanent post.

From 1966 to 1971, a Basic Combat Training Center was established at Ft. Campbell.

In December 1967, the last members of the 101st Airborne Division were airlifted to Vietnam, to be replaced by the 6th Infantry Division, which remained at Ft. Campbell until July 1968.

In December 1971, the 101st Airborne Division returned to Ft. Campbell as a reorganized, all-volunteer unit to establish a permanent headquarters.

The division developed an air assault character in October 1974, and “Air Assault” became a part of its official title.

Current Activity: Ft. Campbell is currently organized as a combined headquarters of division (tactical, staff) elements and post (management support) elements. Approximately 30,000 military and civilian personnel and 4,000 US Army Reserve (USAR) personnel currently further the mission of FTC, namely, “to support and train the 101st Airborne Division (Air Assault), the 5th Special Forces Group and other associated units located on the installation in preparation for a variety of assigned combat and combat-related missions.”

This mission includes the support and training of USAR and the NG. A secondary mission includes providing medical and dental care for active duty military, their dependents, and retired military personnel. An additional mission is to train noncommissioned officers in specialties in the fundamentals of leadership. Critical to the military operation are provisions for the safety and security of all personnel.

Cleanup Program Summary

PROGRAM PROGRESS:

IRP:

- **Prior Year Progress:** RFI/CMS at 33 sites (FCPB-03, 04, 07, 09, 15, 17, 18, 20, 21, 23, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 40, 48, 49, 51, 53, 57, 58, 59, 60, 62, 63), CMI(C) at 8 sites (FCPB-07, 09, 26, 30, 35, 36, 48, 49), CMI(O) at 1 site (FCPB-09) and LTM at 10 sites (FCPB-03, 28, 30, 31, 32, 33, 34, 37, 44, 47)
- **Future Plan of Action:** The following phases are programmed: RFI/CMS at 4 sites (FCPB-10, 38, 43, 65), IRA at 1 site (FCPB-38), CMI(C) at 2 sites (FCPB-43, 65), CMI(O) at 1 site (FCPB-49), and LTM at 6 sites (FCPB-7, 9, 24, 26, 48, 58).

MMRP:

- **Prior Year Progress:** Phase 3 Army Range Inventory completed in November 2003. The inventory identified seven sites as eligible for the MMRP
- **Future Plan of Action:** Ft. Campbell began a MMRP SI in FY06 to evaluate all sites identified in the Phase 3 Range Inventory. NFA is expected at one site, while future Remedial Investigations and soil removal is possible at the remaining six sites.

BRAC: There are no BRAC sites at Ft. Campbell

FORT CAMPBELL

INSTALLATION RESTORATION PROGRAM

Total AEDB-R IRP Sites/AEDB-R Sites with Response Complete: 62/49

Different Site Types:

4 Fire/Crash Training Areas	7 Contaminated Buildings	1 Contaminated Fill
1 Contaminated Groundwater	4 Surface Disposal Areas	3 Disposal Pit/Dry Wells
1 Firing Range	15 Landfills	1 POL Line
1 Surface Runoff	6 Storage Areas	4 Spill Site Areas
1 Surface Impoundment/Lagoons	1 Mixed Waste Area	1 Sewage Treatment Plant
2 Underground Storage Tanks	1 Radioactive Waste Area	1 UXO/Munitions
2 Aboveground Storage Tanks	1 Waste Treatment Plant	
2 Explosive Ordnance Disposal Areas		
2 Soil Contamination After Tank Removal		

Most Widespread Contaminants of Concern: Metals, VOCs, SVOCs, POLs, Explosive Residues, Pesticides, PCB

Media of Concern: Soil, Groundwater, Surface Water, Sediment

Completed Removal (REM)/Interim Remedial Action (IRA)/Remedial Action (RA):

Soil Vapor Extraction at CAAF
Pump & Treat at CAAF (FY 92)
Cap Landfill (FY 94)
FCPB-07, Pesticide Mixing and Storage Facility - IRA (soil removal)
FCPB-10, Old Open Burn/Open Detonation Area (SWMU #28) - IRA (fencing)
FCPB-16, PCB Storage Area - IRA
FCPB-26 thru 32 & 34, Sanitary/Construction Debris Landfills (SWMU #s 1-7 & 9) - maintenance cover: OMA Funds; Groundwater treatment (SWMU 2) IRA.
FCPB-30, Sanitary Landfill (SWMU #5) - cap
FCPB-35 & 36, Abandoned Fire Training Areas (SWMUs # 12 & 15) - IRA (soil treatment):
*IRA (Soil removal - lead contamination); *IRA (Groundwater treatment)
*=funded under FCPB-38
FCPB-38, CAAF - Immobilizing of sediment of AOC H (FCPB-60); Removal of pesticide contaminated soil at AOC D.
FCPB-47, Post Laundry (Bldg 860) - IRA
FCPB-48, Old Skeet Range (SWMU # 145) - IRA (installation of a 6 foot chain-link fence)
FCPB-48, Old Skeet Range - RA (Soil removal and backfill)
FCPB-49, Blivet Repair Area - IRA (Soil removal)
FCPB-52, Oil Pits - IRA (Oil Pit removals)
FCPB-53, UST Soil Clean Up (SWMU #150) - IRA (tank removal & soil treatment)
FCPB-64 Lube Racks - IRA (Soil removal)
FCPB-38, CAAF - Soil removal - IRA (AOC B)
FCPB-07, Pesticide Mixing and Storage Facility - IRA (additional soil removal)
FCPB-26, Abandoned Dump 2 - IRA (in situ treatment of groundwater)
FCPB-38, Soil Vapor Extraction at CAAF
FCPB-49, Blivet Repair Area (ORC application)

Total IRP Funding:

Prior Year (up to FY05):	\$40,849,710
Current (FY06 expected):	\$ 623,264
Future (FY07+):	\$12,149,000

Duration of IRP:

Year of IRP Inception: 1982

Year of IRP RIP/RC: 2010/2012

Year of IRP Completion including Long-Term Management (LTM): 2036

IRP Contamination Assessment

IRP Contamination Assessment Overview:

In January 1982, the US Army Environmental Center (USAEC, formerly the US Army Toxic and Hazardous Materials Agency (USATHMA), conducted an on-site installation assessment at Ft. Campbell to determine the presence of any toxic or hazardous materials and to assess the potential for off-post migration. Based on the findings of this assessment, a field survey was not recommended.

On October 13, 1985, while drilling an anode bed boring for the cathodic protection system at Campbell Army Airfield (CAAF), the contractor reported a strong petroleum odor. Because of the suspected hydrocarbon contamination, the US Army Corps of Engineers (COE) District, Nashville initiated a study into the possibility of subsurface JP-4 contamination. On April 16, 1987, the COE's contractors, MCI Consulting Engineers, Inc., issued a final report that recommended further investigation at the CAAF.

Concurrent with the environmental investigations at the CAAF, an installation-wide assessment was also conducted. To facilitate the preparation of Ft. Campbell's RCRA Part B Permit, the US Army Environmental Hygiene Agency (USAEHA) prepared an evaluation of the installation's solid waste management units (SWMUs) in February 1988. USAEHA identified 37 SWMUs, 17 of which were thought to require additional environmental investigations. This report was forwarded to EPA, Region IV as an attachment to the RCRA Part B Permit application.

On March 23, 1990, Ft. Campbell received a notice of violation from the Kentucky Natural Resources and Environmental Protection Cabinet (KNREPC) for JP-4 fuel contamination found at the CAAF. The Army proposed a remediation schedule, which was accepted by the Underground Storage Tank (UST) Section of the KNREPC. This schedule included an interim remedial action.

On June 14, 1990, EPA, Region IV conducted a RCRA Facility Assessment (RFA) at FTC. The RFA identified 133 SWMUs and three areas of concern (AOCs). Ninety-six SWMUs and two AOCs required further investigation in the form of confirmatory sampling (CS) and analysis. There were nine SWMUs and one AOC at the CAAF where there was a known or suspected waste release, so a RCRA Facility Investigation (RFI) was required. The EPA's RFA expanded the number of SWMUs requiring further investigation from 17 to 108 including CS sites and RFI sites. FTC's RCRA permit, which is jointly held by Tennessee Department of Environment and Conservation (TDEC) and EPA, Region IV, was approved in November 1990. In conjunction with the permit, are deadlines, objectives, responsibilities, and procedures for implementing environmental investigations and corrective actions at Ft. Campbell.

EPA Region IV approved the CS and RFI work plans in June 1992. The actual RFI field work took place in two rounds between August 1992 and March 1993, and July and August of 1993. Based on preliminary results, several data gaps were identified. A follow-on field investigation to fill the gaps was completed in August 1993. The Draft Final CS Report and Draft Final RFI Report were submitted to the regulators in November 1993.

At the CAAF a remedial investigation (RI) was conducted in three phases between 1988 and 1991. The purpose of the RI was to investigate the nature and extent of subsurface

IRP Contamination Assessment

contamination attributable to past leakage from an underground bulk fuel storage system and/or associated transfer piping. Phase one investigations focused on one group of six underground, JP-4, storage tanks to acquire preliminary information to evaluate the site. The phase two investigation was used to acquire more detailed site data and to expand the site to include both sets of six underground, fuel tanks and connecting piping.

Phase three also expanded the site to include an investigation of the JP-4 pipelines leading from the above ground bulk storage tanks to the fueling area. In addition, phase three included a field program to evaluate the potential for contamination caused by discharged fuel in the bedrock aquifer at the CAAF western perimeter and off-site surface water or springs.

The investigations revealed the origin of the JP-4 detected at the soil/bedrock contact zone to be related to percolation of surface water into the bedrock through a sinkhole, rather than percolation through the underlying clay soils the site. Surface water runoff from the study area and adjacent areas flows into a sinkhole located 2,000 feet northeast of the site; the water then travels through vertical conduits in the soil and enters the bedrock aquifer. The aquifer then flows westward under the site, with discharge occurring approximately 2.5 miles away at Quarles Spring. Fuel present in the surface water runoff, probably due to surface spills during aircraft fueling or defueling, would become trapped in the irregular soil/bedrock contact zone after disassociating from the infiltrating surface water and trying to rise to the potentiometric surface of the bedrock aquifer. This interpretation is supported by the virtual absence of JP-4 related contamination in the soil at the site between the near surface and soil/bedrock contact zone.

Exposure points and receptors for the JP-4 or related components in the subsurface soils and groundwater were identified by the Relative Risk Site Evaluation (RRSE). The potential for future exposure at levels that produce risks and hazards in excess of EPA remediation goals exists if water beneath the site is consumed. However, the JP-4 detected at the soil/bedrock contact zone does not appear to be migrating from the study area.

Based on the review of the previous studies conducted at the CAAF, it was determined that additional studies were required to determine the extent of the JP-4 contamination and groundwater movement. Specifically, the tank farm (AOC D), the underground concrete collection vault (SWMU 157) along with the abandoned aircraft washrack (outfall H) should be investigated as part of the site characterization.

To support these additional studies, USEPA IV and the Commonwealth of Kentucky, along with FTC, instituted a concept for CAAF which was designated a "Master RI/FS." This concept permits the designation of the entire CAAF as a SWMU Group (SWMUG) which is similar to the Corrective Action Management Unit Concept. This allows all SWMUs on and near the airfield to be reviewed as a group instead of individually. This concept was expected to speed up the RI/FS process and result in a substantial savings to the Army.

In conjunction with the RI, dye tracing and time of travel studies to determine the hydrogeologic connection between a sinkhole located at the CAAF and several off post springs was conducted. The investigation revealed that water entering the CAAF sinkhole reached Quarries Spring within 4 days, during high flow periods.

The draft final Feasibility Study (FS) report, for the pump and treat system at AOC-A within the CAAF, was completed in January 1992. The objective of remedial actions considered in the FS was to prevent potential future risks due to exposure to site contaminants in the groundwater. The recommended alternatives consist of on-site recovery and treatment of contaminated groundwater, and free product recovery from the soil/bedrock interface zone. The FS was approved in July 1995 by EPA, Region IV.

A free product recovery system was initiated December 1992 as an interim measure. In FY01, a SVE system was designed and implemented at hangars 3 and 4 and in FY02, a government owned SVE system was installed. Further characterization studies are ongoing to determine a final RA.

IRP Cleanup Exit Strategy:

Of the thirteen remaining restoration sites at Ft. Campbell, it is believed that groundwater contamination at Campbell Army Airfield (FCPB-38) has the greatest potential for affecting human health and the environment. As a result, the greatest portion of funds and cleanup efforts will be directed at this site in FY07. A performance based contract is anticipated at eleven sites in FY07. Prioritization of sites and cleanup strategies may change based on the contract.

1987

- Subsurface Investigation for JP-4 Contamination, PPOL Facility 7226, CAAF Investigation, by MCI Consulting Engineers, Inc. for US Army Corps of Engineers, Nashville District, Apr
- Task Order No. 9 Remedial Investigation/Feasibility Study and Limited Remedial Actions, UFSS at Campbell Army Airfield, by Dames & Moore for US Army Toxic and Hazardous Materials Agency, Aberdeen Proving Ground, Dec

1989

- Task Order No. 9 Addendum to Remedial Investigation Report for Ft. Campbell, Kentucky, UFSS at Campbell Army Airfield, by Dames & Moore for US Army Toxic and Hazardous Materials Agency, Aberdeen Proving Ground

1990

- Campbell Army Airfield, UFSS Site/Outfall C, Outfall C (AOC H), by ERC Environmental and Energy Services Company for US Army Corps of Engineers, Nashville District, Feb
- Task Order No. 19 Ft. Campbell RI Completion, UFSS at Campbell Army Airfield, by Dames & Moore for US Army Toxic and Hazardous Materials Agency, Jul
- Interim RCRA Facility Assessment Report for Ft. Campbell Military Reservation, RFA Report, Prepared by A.T. Kearney, Inc. for US Environmental Protection Agency, Region IV, Aug
- Notice Of RCRA Final Permit Decision for Hazardous and Solid Waste, Notice Of RCRA Final Permit Decision for Hazardous and Solid Waste, Issued by the Environmental Protection Agency: Region IV, Sep

1991

- Remedial Investigation Report for UFSS Site Ft. Campbell Kentucky, Volume I of II, UFSS at Campbell Army Airfield, by Dames & Moore, Ltd. For US Army Corps of Engineers Toxic and Hazardous Materials Agency, Jul
- Remedial Investigation Report for UFSS Site Ft. Campbell Kentucky, Volume II of II, UFSS at Campbell Army Airfield, by Dames & Moore, Ltd. For US Army Corps of Engineers Toxic and Hazardous Materials Agency, Jul

1992

- Feasibility Study Report, UFSS Site, Campbell Army Airfield, Task Order No. 7, UFSS at Campbell Army Airfield, by Dames & Moore for US Army Toxic and Hazardous Materials Agency, Jan
- Confirmatory Sampling Plan for Sites at Ft. Campbell, Final - SWMUs 1-11, 13, 14, 19, 20, 22, 24, 25, 31, 33, 36, 37, 41, 42, 47a, 48, by Metcalf & Eddy, Inc. for Department of the Army, US Toxic and Hazardous Waste Materials Agency, Jun
- Hazard Ranking System (HRS2) Score Summary Report for Ft. Campbell Military Reservation, Summary Report, by Advanced Sciences, Inc. for US Army Corp of Engineers Toxic and Hazardous Materials Agency, Jul

1993

- JP-4 Fueling/Defueling Feasibility Study for Ft. Campbell, CAAF Study, by EA Engineering, Science, and Technology, Inc. for US Army Corps of Engineers, Nashville, Feb
- Final Submittal, Construction Site Clearance Survey at Old Hospital Complex for Directorate of Engineering and Housing (DEH), Construction Site Clearance Survey at Old Hospital Complex, by LAW Environmental, Inc. for US Army Corps of Engineers, Nashville District, Jul

1994

- Analysis of Groundwater Recharge and Transfer Mechanisms, Boiling Springs, Ewers Water Consultants Inc., Jan
- Quarles Spring Ground Water Basin Analysis, Quarles Spring, by Ewers Water Consultants Inc., Jan
- Solid Waste Management Unit Integrity Check of Oil/Water Separators, Integrity check of Oil/Water Separators, by Ferguson Harbour Incorporated for Dames & Moore, March
- Ft. Campbell, Kentucky Oil/Water Separator Investigation Including Interior Integrity Inspections and Contamination Evaluation, Volume I, Oil/Water Separators, by Dames & Moore for US Army Corps of Engineers, May
- Ft. Campbell, Kentucky Oil/Water Separator Investigation Including Interior Integrity Inspections and Contamination Evaluation, Volume II, Oil/Water Separators, by Dames & Moore for US Army Corps of Engineers, May
- Final Report Waste Disposal Engineering Study No.37-26-J31N-94 Demolition Site Assessment Ft. Campbell Kentucky 4-12
USAEHA, Demolition Site Assessment US Army Environmental Hygiene Agency, US Army Environmental Hygiene Agency, Jun
- Berm Pit Projects, Ft. Campbell, Tennessee/Kentucky, Berm Pits, by Four Seasons Environmental, Inc. for US Army Corps of Engineers, Louisville District, Dec

1995

- UST Closure Report for Ft. Campbell, Kentucky, Werner Park Building # 1479, SWMU 151D, SWMU 151D, Werner Park Building # 1479, by SUB TECH, Jan
- UST Closure Report for Ft. Campbell Kentucky, Werner Park, Building #1489, SWMU 151 F, SWMU 151 F, Werner Park, Building #1489, by SUB TECH, Apr
- UST Closure Report for Ft. Campbell Kentucky, Werner Park, Building # 1484, SWMU 151 E, SWMU 151 E, Werner Park, Building #1484, by SUB TECH Inc., Apr
- Closure Assessment Report Kentucky Pipeline 6486, Wickham Avenue, Pipeline 6486, Wickham Avenue, by EMPE for the US Army Corps of Engineers, Louisville District, May
- RCRA Facility Investigation at Ft. Campbell, Volume I of II, SWMU's 12/15, 21, 27, 28, 32, 35, 50 and 134 thru 137 (801st Motor Pool), by Metcalf & Eddy, Inc., For US Army Environmental Center, Aberdeen Proving Ground, Jul
- RCRA Facility Investigation at Ft. Campbell, Volume II of II, SWMU's 12/15, 21, 27, 28, 32, 35, 50 and 134 thru 137 (801st Motor Pool), by Metcalf & Eddy, Inc., For US Army Environmental Center, Aberdeen Proving Ground, Jul

1995 (*continued*)

- Confirmatory Sampling Sites at Ft. Campbell (FTC), Volume I of II, SWMU's 1-11, 13, 14, 19, 20, 22, 24, 25, 31, 33, 36, 37, 41, 47 and 48, by Metcalf & Eddy, Inc., For US Army Environmental Center, Aberdeen Proving Ground, Jul
- Confirmatory Sampling Sites at Ft. Campbell (FTC), Volume II of II, SWMU's 1-11, 13, 14, 19, 20, 22, 24, 25, 31, 33, 36, 37, 41, 47 and 48, by Metcalf & Eddy, Inc., For US Army Environmental Center, Aberdeen Proving Ground, Jul
- System Evaluation/Concept Design, JP-4 Interim Remediation System Upgrade, Campbell Army Airfield, Ft. Campbell, Kentucky, OGDEN Environmental and Energy Services, Aug

1996

- Work Performed Building #6486, Building # 6486, (Underground storage Tank Site near #6486), by SVERDRUP Environmental (SvE) for US Army Corps of Engineers, Louisville District, Jan
- Final RFI Work Plan Ft. Campbell, Kentucky, Oil/Water Separator Investigation, Oil/Water Separators, Dames & Moore for US Army Corps of Engineers, Nashville District, Mar
- Delivery Order No. 16 Closure Report, SWMU 12/15, Science & Technology Inc. (SCITEK), May
- Final Assessment and Recommendations for Oil/Water Separators at Ft. Campbell, Kentucky, Assessment and Recommendations for Oil/Water Separators, by EA Engineering, Science and Technology, Inc for US Army Corps of Engineers, Nashville District, May
- Recovery and Rehabilitation of Seven Monitoring Wells, Campbell Army Airfield Monitoring Wells, BAT Associates, Inc. for US Army Corps of Engineers, Nashville District, Jul
- 08/1996, Gore-Sorber Screening Survey, CAAF Ft. Campbell, Kentucky, Campbell Army Airfield, W.L. Gore & Associates, Inc., Aug
- State of Kentucky Solid Waste Management Closure Report for Underground Storage Tanks and Oil/Water Separators at #6551, #6555, #6559, #6563, 155AB, 155AC, 155AD, 155E, by EMPE, Inc. for the US Army Corps of Engineers, Louisville District, Oct
- Work Performed, Fire Fighting Training Area, Solid Waste Management Unit 15, SWMU 12/15, Sverdrup Environmental Inc., Oct
- Potentiometric Surface of the Bedrock Aquifer in the Campbell Army Airfield Area, Kentucky and Tennessee, Campbell Army Airfield, by United States Geological Survey, Nov

1997

- Historical Photogeological Analysis of Surface Terrain Features, Campbell Army Airfield, Report and CD, by US Army Topographic Engineering Center for US Army Corps of Engineers, Feb
- Standard Sampling and Analysis Work Plan, Ft. Campbell, Kentucky, SOP's for Groundwater Sampling Program, HAZWRAP, Apr

1997 (continued)

- SWMU 160 Old Waste Water Treatment Facility, Old Clarksville Base, Ft. Campbell, Kentucky, SWMU 160, Arthur D. Little, May
- Hydrogeologic Report for RCRA SWMU Assessment and RCRA Facility Investigation of Sites at Ft. Campbell, Kentucky, Volume I of II, SWMU's 2, 5, 9, 12/15 and 28, Beaver, Blue, Boiling, Dennis, Gate 1, and Quarles Springs, Arthur D. Little, May
- Hydrogeologic Report for RCRA SWMU Assessment and RCRA Facility Investigation of Sites at Ft. Campbell, Kentucky, Volume II of II, SWMU's 2, 5, 9, 12/15 and 28, Beaver, Blue, Boiling, Dennis, Gate 1, and Quarles Springs, Arthur D. Little, May
- Confirmatory Sampling, SWMU 36- Abandoned Waste Oil Tank, SWMU 36, by US Army Corps of Engineers, Nashville District, Jun
- Solid Waste Management Unit 141, Range 17 Construction Debris Landfill, Ft. Campbell, Kentucky, SWMU 141, HAZWRAP, Jun
- Solid Waste Management Unit 146, Old Clarksville Base Blivet Repair Area, Ft. Campbell, Kentucky, SWMU 146, HAZWRAP, Jun
- RCRA SWMU Assessment and RCRA Facility Investigation, Ft. Campbell, Kentucky, Volume I of III, SWMU's 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, Arthur D. Little, Jun
- RCRA SWMU Assessment and RCRA Facility Investigation, Ft. Campbell, Kentucky, Volume II of III, SWMU's 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, Arthur D. Little, Jun
- RCRA SWMU Assessment and RCRA Facility Investigation, Ft. Campbell, Kentucky, Volume III of III, SWMU's 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, Arthur D. Little, Jun
- RCRA SWMU Assessment and RCRA Facility Investigation, Ft. Campbell, Kentucky, Supplemental Volume Chemical Data, SWMU's 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, Arthur D. Little, Jun
- Final Technical Memorandum US Army Ft. Campbell, Kentucky Geophysical Surveys, SWMU's 149, 12/15 and 152, Weston Geophysical Corporation, Sep
- Historical Photogeological Analysis of Surface Terrain Features, Cantonment Area, Report and CD, by US Army Topographic Engineering Center for the US Army Corps of Engineers, Sep
- 1997 Hydrogeology Update Report, Hydrogeology Report, Arthur D. Little, September
- Solid Waste Management Units 95, 96, and 97 Waste Oil Tanks at Building 7010, SWMU's 95 thru 97, by CKY Inc. for US Department of Energy, Oct
- Solid Waste Management Units 98 and 99 Waste Oil Tanks at Building 5739, SWMU's 98 and 99, by CKY Inc. for US Department of Energy, Oct

1998

- RCRA Year-End Summary Report of the 1997 Quarterly Groundwater Sampling Results, Monitoring Wells, HAZWRAP, Mar
- Monitoring and Sampling of Groundwater Wells at Ft. Campbell Army Airfield, Ft. Campbell, Kentucky, Campbell Army Airfield Monitoring Wells, by BAT Associates, Inc. for US Army Corps of Engineers, Nashville District, Apr
- Phase III RCRA Facility Investigation Oil/Water Separators, Oil/Water Separators, by ERM Program Management Company for US Army Corps of Engineers, Nashville District, Jun

1998 (continued)

- Solid Waste Management Units 95, 96, 97, 98, and 99 Waste Oil Tanks at Building 7010 and Building 5739, SWMU's 95 thru 99, by CKY, Inc. for US Department of Energy, Jun
- RCRA Final Confirmatory Sampling Report Solid Waste Management Unit 156 Directorate of Public Works Pole Yard, SWMU 156, by HAZWRAP for US Department of Energy, Jul
- Ft. Campbell Landfill 7 Remediation Activities; Woodchipper, bulldozers, rock rakes, SMWU 7, (Video), STEP, Inc., Sep
- Report for the RCRA Facility Investigation (RFI) Conducted at SWMU 158 Campbell Army Airfield, SWMU 158, by BAT Associates, Inc. for US Army Corps of Engineers, Nashville District, Sept
- Engineering Report for the RFI of SWMU 147 and Facility Assessment of AOC I at Ft. Campbell, Kentucky, SWMU 147 and AOC I, by Science Applications International Corporation for US Army Corps of Engineers, Nashville District, Oct
- Oil/ Water Separator Directory, Oil/Water Separators, by Program Management Company for US Army Corps of Engineers, Nashville District, Nov

1999

- Phase I Ground Truthing Investigation as Part of the Master RFI at Campbell Army Airfield, Ft. Campbell, Kentucky, Campbell Army Airfield, HAZWRAP, Jan
- Oil Water Separator Clean-outs and Inspections, Oil/Water Separators, by Program Management Company for the US Army Corps of Engineers, Nashville District, Mar
- Area of Concern (AOC) E Wastewater Underground Storage Tank at Building 7741, Former Weapons Storage Area, AOC E, by STEP, Inc. for US Army Department of Energy, Mar
- Interim Corrective Action, Building 3902 (SWMU 36), SWMU 36, by Environmental Chemical Corporation (ECC) for US Army Corps of Engineers, Nashville District, Mar
- Year End Summary Report of the 1998 Quarterly Groundwater Sampling Results (October 1997 thru September 1998), Monitoring Program, by HAZWRAP, Apr
- Radiological Surveys of Former Atomic Energy Commission/Department of Defense Facilities on Old Clarksville Base, Buildings 7825, 7874 and 7811, by T N & Associates, Inc. for US Department of Energy, Jun
- Tracer Tight Leak Test, UFSS and UST's at Campbell Army Airfield, by Tracer Research Corporation for US Army Corps of Engineers, Nashville District, Jul
- Master Environmental GIS Database Data Management and Technical Specification Document for Ft. Campbell, Kentucky, Tech Spec Document, by Harding Lawson Associates, Inc. for Corps of Engineers, Nashville District, Sept
- 1998 Hydrogeology Report Update, Hydrogeology Report, by Arthur D. Little, Inc. for U. S. Department of Energy, Oct
- Surface Water Runoff Study from CAAF '99 Hydrogeological Characterization Program, Campbell Army Airfield, by US Army Corps of Engineers, Nashville District, Dec
- Final Investigation Report for An Interim Corrective Measure and Confirmatory Sampling at AOC J Carcass Burial Ground, AOC J, by STEP, Inc for US Department of Energy, Dec

2000

- Phase III RCRA Facility Investigation Work Plan for Wastewater Treatment Plant Sludge Dumping Area, Solid Waste Management Unit 48, SWMU 48, by Arthur D. Little, Inc. for U. S. Army Corps of Engineers, Nashville District, Jan
- Final RCRA Facility Investigation Confirmatory Sampling Report at Solid Waste Management Units 138, 159, and 164, Volume I of V, Text, Tables and Figures, SWMU's 138, 159 and 164, by T N & Associates, Inc. for US Department of Energy, Jan
- Final RCRA Facility Investigation Confirmatory Sampling Report at Solid Waste Management Units 138, 159, and 164, Volume II of V, Analytical Data, SWMU's 138, 159 and 164, by T N & Associates, Inc. for US Department of Energy, Jan
- Final RCRA Facility Investigation Confirmatory Sampling Report at Solid Waste Management Units 138, 159, and 164, Volume III of V, Analytical Data, SWMU's 138, 159 and 164, by T N & Associates, Inc. for US Department of Energy, Jan
- Final RCRA Facility Investigation Confirmatory Sampling Report at Solid Waste Management Units 138, 159, and 164, Volume IV of V, Analytical Data, SWMU's 138, 159 and 164, by TN & Associates, Inc. for US Department of Energy, Jan
- Final RCRA Facility Investigation Confirmatory Sampling Report at Solid Waste Management Units 138, 159, and 164, Volume V of V, Analytical Data, SWMU's 138, 159 and 164, by TN & Associates, Inc. for US Department of Energy, Jan
- Final Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI)/Confirmatory Sampling (CS) Report at SWMU's 140, 148, 152, 153, and 149, Volume I of VI, Text, Tables and Figures, SWMU's 140, 148, 152, 153 and 149, by T N & Associates, Inc. for US Department of Energy, Jan
- Final Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI)/Confirmatory Sampling (CS) Report at SWMU's 140, 148, 152, 153, and 149, Volume II of VI, Appendix A Analytical Data, SWMU's 140, 148, 152, 153 and 149, by T N & Associates, Inc. for US Department of Energy, Jan
- Final Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI)/Confirmatory Sampling (CS) Report at SWMU's 140, 148, 152, 153, and 149, Volume III of VI, Appendix A Analytical Data (Cont'd), SWMU's 140, 148, 152, 153 and 149, by T N & Associates, Inc. for US Department of Energy, Jan
- Final Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI)/Confirmatory Sampling (CS) Report at SWMU's 140, 148, 152, 153, and 149, Volume IV of VI, Appendix A Analytical Data (Cont'd), SWMU's 140, 148, 152, 153 and 149, by TN & Associates, Inc. for US Department of Energy, Jan
- Final Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI)/Confirmatory Sampling (CS) Report at SWMU's 140, 148, 152, 153, and 149, Volume V of VI, Appendix A Analytical Data (cont'd), SWMU's 140, 148, 152, 153 and 149, by T N & Associates, Inc. for US Department of Energy, Jan
- Final Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI)/Confirmatory Sampling (CS) Report at SWMU's 140, 148, 152, 153, and 149, Volume VI of VI, Appendices B, C and D, SWMU's 140, 148, 152, 153 and 149, by TN & Associates, Inc. for US Department of Energy, Jan
- Final Data Summary for Removal Action and RCRA Facility Investigation at Solid Waste Management Unit 160, Waste Water Treatment Plant, SWMU 160, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, Jan

2000 (*continued*)

- Confirmatory Sampling at the Sinkhole at 30th and Colorado (AOC K), AOC K, by PMC for US Army Corps of Engineers, Nashville District, Feb
- Oil Water Separator Clean Out Report Ft. Campbell, Oil Water Separator Clean Out Report, by AIMTECH for US Department Of Energy, Feb
- Final Data Summary for Confirmatory Sampling at Solid Waste Management Unit 166, Underground Storage Tank Pit 5628, SWMU 166, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, Mar
- Investigation Report for an Interim Corrective Measure and Confirmatory Sampling at SWMU 167 (DRMO), SWMU 167, by STEP, Inc. for the US Army Corps of Engineers, Nashville District, Mar
- Final Data Summary for Phase II RCRA Facility Investigation of Solid Waste Management Unit 138, SWMU 138, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, Mar
- Investigation Report for Removal Action and RCRA Facility Investigation (RFI) at SWMU 160, Wastewater Treatment Plant, SWMU 160, by STEP, Inc. for US Army Corps of Engineers, Nashville District, Mar
- Final Investigation Report for Removal and Subsurface Investigation of Inactive Fuel Lines at AOC D and Pumphouse 1, AOC A and AOC D, by STEP for US Army Corps of Engineers, Nashville District, Mar
- RCRA Confirmatory Sampling Report for Addendum 13 (SWMU 163) 584th Maintenance Battery Service Room, SWMU 163, by STEP, Inc. for US Army Corps of Engineers, Nashville District, Apr
- Campbell Army Airfield, Drain Line, Installation of Bentonite Barriers Completion Report, Campbell Army Airfield, by STEP, Inc. for US Army Corps of Engineers, Nashville District, Apr
- Final Report: Phase I RCRA Facilities Investigation and Interim Removal Action at AOC O (Central Energy Facility), AOC O, by PMC (Program Management Company) for US Army Corps of Engineers, Nashville District, Apr
- Ft. Campbell Risk Assessment Strategy Volume I. (Update No. 1), Risk Assessment Volume I of II, by AIMTECH for US Department of Energy, May
- Ft. Campbell Risk Assessment Strategy Volume II. (Update No.1), Risk Assessment Volume II of II, by AIMTECH for US Department of Energy, May
- RCRA Confirmatory Sampling Report for Solid Waste Management Unit (SWMU) 14, Construction Debris Landfills 14 and 15, SWMU 14, by AIMTech for the US Department of Energy, Aug
- Phase II RCRA Facility Investigation (RFI) at Solid Waste Management Units (SWMU) 134-137, 801st Motorpool, SWMU 134 thru 137 (801st Motorpool), by STEP, Inc. for the US Army Corps of Engineers, Nashville District, Aug
- Phase I RCRA Facilities Investigation (RFI) and Interim Removal Action (IRA) at AOC O, KY (Central Energy Facility), AOC O, by Program Management Company for the US Army Corps of Engineers, Nashville District, Aug
- Final Year-end Summary Report of the 1999 Quarterly Groundwater Sampling Results, Ft. Campbell, Monitoring Program, by STEP, Inc for the US Army Corps of Engineers, Nashville District, Oct

2000 (*continued*)

- RFI/CS Report for Campbell Army Airfield, Volume I of IX, Text, Tables and Figures, SWMU's 14, 154 and 12/15, AOC's B, C, D, F, G and H, by HAZWRAP for US Department of Energy, Dec
- RFI/CS Report for Campbell Army Airfield, Volume II of IX, Analytical Data, SWMU's 14, 154 and 12/15, AOC's B, C, D, F, G and H, by HAZWRAP for US Department of Energy, Dec
- RFI/CS Report for Campbell Army Airfield, Volume III of IX, Analytical Data, SWMU's 14, 154 and 12/15, AOC's B, C, D, F, G and H, by HAZWRAP for US Department of Energy, Dec
- RFI/CS Report for Campbell Army Airfield, Volume IV of IX, Analytical Data, SWMU's 14, 154 and 12/15, AOC's B, C, D, F, G and H, by HAZWRAP for US Department of Energy, Dec
- RFI/CS Report for Campbell Army Airfield, Volume V of IX, Analytical Data, SWMU's 14, 154 and 12/15, AOC's B, C, D, F, G and H, by HAZWRAP for US Department of Energy, Dec
- RFI/CS Report for Campbell Army Airfield, Volume VI of IX, Geotechnical Analysis, SWMU's 14, 154 and 12/15, AOC's B, C, D, F, G and H, by HAZWRAP for US Department of Energy, Dec
- RFI/CS Report for Campbell Army Airfield, Volume VII of IX, Field Forms, SWMU's 14, 154 and 12/15, AOC's B, C, D, F, G and H, by HAZWRAP for US Department of Energy, Dec
- RFI/CS Report for Campbell Army Airfield, Volume VIII of IX, Groundtruthing Reports, SWMU's 14, 154 and 12/15, AOC's B, C, D, F, G and H, by HAZWRAP for US Department of Energy, Dec
- 12/2000, RFI/CS Report for Campbell Army Airfield, Volume IX of IX, Laboratory Detections, SWMU's 14, 154 and 12/15, AOC's B, C, D, F, G and H, by HAZWRAP for US Department of Energy, Dec
- Final Data Summary and Corrective Action Report for Pumphouse 1 Fuel Leak Reconnaissance and Repair, AOC A, by STEP, Inc. for the US Army Corps of Engineers, Nashville District, Dec

2001

- Final Data Summary for Phase III RCRA Confirmatory Sampling at 17 Oil Pits, SWMU 149, SWMU 149, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, Jan
- Final Data Summary RCRA Interim Removal Action and Confirmatory Sampling at SWMU 164, Fuel Filter House, SWMU 164, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, Feb
- Final Report, Confirmatory Sampling Investigation at Acid Tanks and Oil/Grease Interceptors (AOC M), AOC M, Acid Tanks and Oil/Grease Interceptors, by PMC for US Army Corps of Engineers, Nashville District, Feb
- Final Report for Oil/Water Separator Integrity Inspections and Isolations, Oil/Water Separators, by Program Management Company for the US Army Corps of Engineers, Nashville District, Mar

2001 (continued)

- Final Year-End Summary Report of the 2000 Quarterly Groundwater Sampling Results, Monitoring Program, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, Apr
- Hydrogeologic Characterization Program at Sabre Heliport Area (Final Report), Sabre Heliport, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, May
- Abandoned Dump Site Repair & Maintenance Program, Abandoned Dumps, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, May
- Final Resource Conservation and Recovery Act Confirmatory Sampling Report for Solid Waste Management Unit 84, SWMU 84, by SAIC for the US Army Corps of Engineers, Nashville District, Jun
- Final Report on Interim Remedial Action at 30th and A Shau Valley (AOC K-TN), AOC K, by Program Management Company for the US Army Corps of Engineers, Nashville District, Jun
- Final Data Summary for Additional Sampling in Support of a Confirmatory Sampling Effort at Solid Waste Management Unit 148, Old Clarksville Base Fire Training Area, SWMU 148, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, Jul
- Final Data Summary for Phase II RCRA Facility Investigation (RFI) at Campbell Army Airfield (CAAF) for Solid Waste Management Unit 154, Geophysical Anomaly, Bldg. 7156, Bldg. 7173 and SWMU 41, SWMU 41 and AOC A, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, Jul
- Final Investigation Report for RCRA Interim Removal Action and Confirmatory Sampling at Solid Waste Management Unit 164, Fuel Filter House, SWMU 164, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, Jul
- Final Data Summary for Phase III RCRA Facility Investigation/Confirmatory Sampling at Campbell Army Airfield for AOC A (Engine Test Facility) and AOC D (Bulk Fuel Farm), AOC A and AOC D, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, Jul
- Final Data Summary for Phase I RCRA Facility Investigation (RFI), Underground Storage Tank (UST) Soil Cleanup at Solid Waste Management Unit 150, SWMU 150, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, Jul
- Final Data Summary for RCRA Confirmatory Sampling at Area of Concern L, Lubrication Racks, AOC L, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, Jul
- Final Data Summary , Phase I Resource Conservation and Recovery Act Facility Investigation (RFI), UST Pit 5628 at SWMU 166, SWMU 166, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, Jul
- Data Summary for Phase III RCRA Facility Investigation of Solid Waste Management Unit 138, SWMU 138, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, Aug
- 1999 Hydrogeology Update Report, Volume I of II, Text, Tables, Figures and Appendices A through B, Hydrogeology Report, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Aug
- 1999 Hydrogeology Update Report, Volume II of II, Hydrogeology Report, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Aug

2001 (*continued*)

- Final Data Summary, Free Product Recovery at Pumphouse 1, AOC A, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, Aug
- SWMU and AOC Investigations at Multiple Sites, Werner Park, SWMU 168, AOC I, SWMU 146 and Oil/Water Separators, by Program Management Company for the US Army Corps of Engineers, Nashville District, Aug
- Final Data Summary for Interim Remedial Actions at AOC B, AOC G and AOC H, AOC's B, G and H, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, Sept
- Final, Sludge Sampling and Removal Report for Oil/Water Separators at Ft. Campbell, Sludge sampling and removal for OWS, by SAIC for the US Army Corps of Engineers, Nashville District, Sep
- 09/2001, Final Report: Determination Of Jet Fuel Retention In Soil, AOC D, SSMU 41, Engine Test Facility, Hangar 3, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Sep
- Final Standard Sampling and Analysis Plan (Revision 001), Standard Sampling and Analysis Plan, by STEP, Inc. for the US Army Corps of Engineers, Nashville District, Oct
- Final Resource Conservation and Recovery Act Facilities Investigation Generic Work Plan Update No. 2, Generic Work Plan, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, Oct
- Final Data Summary for Phase III RCRA Facility Investigation at Solid Waste Management Units 149A and 149F, Oil Pits, SWMU's 149A and 149F, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, Oct
- Final Corrective Measures Study for Solid Waste Management Unit 138 (PX Service Station), SWMU 138, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, Nov
- Final Investigation Report for Phase I RCRA Facility Investigation, Underground Storage Tank Soil Cleanup at Solid Waste Management Unit 150, SWMU 150, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, Nov
- Final Report for Confirmatory Sampling at Range Control Skeet Ranges and Sabre Hot Fuel Pads, SWMU 171 and Sabre Heliport, by Program Management Company for the US Army Corps of Engineers, Nashville District, Nov
- Comprehensive Data Summary for Phase I and II RCRA Facility Investigations at Solid Waste Management Unit 146 (Blivet Repair Facility), SWMU 146, by Program Management Company for the US Army Corps of Engineers, Nashville District, Dec

2002

- Final Data Summary, Phase II RCRA/RFI for SWMU 50, Range 31 Disposal Area, Addendum 22 to the Generic Work Plan, (First sent out in October 2001 and revised in 1/2002 and 5/2003), SWMU 50, (First sent out in October 2001 and revised in 1/2002 and 5/2003), by STEP, Inc. for the US Army Corps of Engineers, Nashville District, Jan

2002 (continued)

- Final Data Summary Phase II RCRA Facility Investigation at the Chromium Plating Shop (SWMU 140), SWMU 140, by SAIC for US Army Corps of Engineers, Nashville District, Jan
- 2000 Dye Trace Report, Dye Trace Report, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- 2000 Hydrogeologic Characterization Program, Final Report for Water and Sediment Quality of the Springs at Ft. Campbell, Kentucky, Hydro Report, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Final Data Summary, Resource Conservation and Recovery Act Facility Investigation, Sinkhole at 30th and A Shau Valley Road Motor Pool (AOC K), AOC K, by SAIC for the US Army Corps of Engineers, Nashville District, Jan
- Resource Conservation and Recovery Act (RCRA) Facility Investigation Report, Introduction, Volume 1 of 16, SWMU's 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12/15, 22, 24, 25, 28, 33, 41, 42, 47/48 and 50, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Resource Conservation and Recovery Act (RCRA) Facility Investigation Report, Sanitary and Construction Debris Landfills, SWMU's 001-006, Volume 2 of 16, SWMU's 1, 2, 3, 4, 5 and 6, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Resource Conservation and Recovery Act (RCRA) Facility Investigation Report, Sanitary Landfill, SWMU 007, Volume 3 of 16, SWMU 7, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Resource Conservation and Recovery Act (RCRA) Facility Investigation Report, Sanitary Landfill, SWMU 008, Volume 4 of 16, SWMU 8, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Resource Conservation and Recovery Act (RCRA) Facility Investigation Report, Construction Debris Landfill, SWMU 009, Volume 5 of 16, SWMU 9, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Resource Conservation and Recovery Act (RCRA) Facility Investigation Report, Sanitary Landfill, SWMU 011, Volume 6 of 16, SWMU 11, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Resource Conservation and Recovery Act (RCRA) Facility Investigation Report, Fire Training Areas, SWMU's 012/015, Volume 7 of 16, SWMU 12/15, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Resource Conservation and Recovery Act (RCRA) Facility Investigation Report, Battery Maintenance Facility, SWMU 022, Volume 8 of 16, SWMU 22, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Resource Conservation and Recovery Act (RCRA) Facility Investigation Report, Battery Maintenance Facility, SWMU 024, Volume 9 of 16, SWMU 24, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Resource Conservation and Recovery Act (RCRA) Facility Investigation Report, Battery Maintenance Facility, SWMU 025, Volume 10 of 16, SWMU 25, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Resource Conservation and Recovery Act (RCRA) Facility Investigation Report, Old Explosives Detonation Area, SWMU 028, Volume 11 of 16, SWMU 28, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Jan

2002 (continued)

- Resource Conservation and Recovery Act (RCRA) Facility Investigation Report, Former Pesticide Mixing and Storage Facility, SWMU 033, Volume 12 of 16, SWMU 33, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Resource Conservation and Recovery Act (RCRA) Facility Investigation Report, Temporary Oasis Rapid Refueling Area, SWMU 041, Volume 13 of 16, SWMU 41, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Resource Conservation and Recovery Act (RCRA) Facility Investigation Report, Satellite Waste Oil Buffaloes, SWMU 042, Volume 14 of 16, SWMU 42, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Resource Conservation and Recovery Act (RCRA) Facility Investigation Report, Wastewater Treatment Plant Sludge Drying Beds and Dumping Area, SWMU's 047/048, Volume 15 of 16, SWMU's 47 and 48, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Resource Conservation and Recovery Act (RCRA) Facility Investigation Report, Range 31 Disposal Area, SWMU 050, Volume 16 of 16, SWMU 50, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Resource Conservation and Recovery Act (RCRA) Facility Investigation Report, Appendix B: Ecological Risk Assessment-Supporting Documentation, Appendix B, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Resource Conservation and Recovery Act (RCRA) Facility Investigation Report, Appendix C through Appendix G, Appendix C through G, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Resource Conservation and Recovery Act (RCRA) Facility Investigation Report, Appendix H through Appendix N, Appendix H through N, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Resource Conservation and Recovery Act (RCRA) Facility Investigation Report, Appendix O, Volume I of II, Appendix O, Volume I of II, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Resource Conservation and Recovery Act (RCRA) Facility Investigation Report, Appendix O, Volume II of II, Appendix O, Volume II of II, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Resource Conservation and Recovery Act (RCRA) Facility Investigation Report, Appendix P, Appendix P, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Resource Conservation and Recovery Act (RCRA) Facility Investigation Report, Appendix Q, R and S, Appendix Q, R and S, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Final Data Summary for SWMU 149 Oil Pits, RCRA Interim Removal Action for Six Oil Pits, Fiscal Year (FY) 2001, SWMU 149, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, Jan
- Final Report for Microgravity Pilot Test, Ft. Campbell Kentucky, SWMU 138, AOC A, SWMU 140, by Arthur D. Little, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Final Data Summary for Geophysical Anomalies at the Campbell Army Airfield, AOC A, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, 02/2002

2002 (continued)

- Final Data Summary RCRA Addendum 26 to the Generic Work Plan, Phase II Campbell Army Airfield Master RCRA Facility Investigation at Building 7154 (Hangar 3), Paint Spray Booth (at Building 7156), and Monitoring well CAAF-11, Building 7154 (Hangar), Paint Spray Booth (Building 7156), CAAF-11, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, Feb
- Final Data Summary RCRA Site Investigation at SWMU 152, Demolition Landfill (Joe Swing Pool), SWMU 152, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, Feb
- Final Data Summary RCRA Facility Investigation and Confirmatory Sampling at SWMU 32, Golf Course Pesticide Mixing Area, SWMU 32, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, Feb
- Final Data Summary RCRA Corrective Action for SWMU 145, Old Skeet Range, SWMU 145, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, February
- Final Data Summary for Interim Remedial Actions at SWMU 33 (Pesticide Mixing Area), SWMU 33, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, Feb
- Final Data Summary for RCRA Facility Investigation at AOC A Pumphouse Wells at the Campbell Army Airfield, AOC A, by STEP, Inc. for the US Army Corp of Engineers, Nashville District, Feb
- Final Data Summary RCRA, CS for 27 Oil / Water Separators (FY01) ,Addendum 14A to the Generic Work Plan, Oil / Water Separators (27), Addendum 14A, by STEP, Inc. for the US Army Corps of Engineers, Nashville District, May
- Final Data Summary for Phase IV Campbell Army Airfield Master Resource Conservation Recovery Facility Investigation for Free Product Recovery at Pumphouse 1, Pumphouse 2, Monitoring wells 7, 11, 14, 32, Abandoned Fuel Line, and Area of Concern D, Addend, Pumphouse 1, Pumphouse 2, Monitoring wells 7, 11, 14, 32, Abandoned Fuel Line, and Area of Concern D, by STEP, Inc. for the US Army Corps of Engineers, Nashville District, May
- Final: Year End Summary Report of the 2001 Quarterly Groundwater Sampling Results, Monitoring Program, by STEP Inc for the US Army Corps of Engineers, Nashville District, Sep
- Final: Data Summary Interim Remedial Measures at SWMU 146,Blivet Repair Facility, SWMU 146, by STEP Inc. for the US Army Corps of Engineers, Nashville District, Oct
- Final Data Summary for RCRA Addendum 3D to the Generic Work Plan, Oct
- Excavation and Removal at SWMU 170 and SWMU 149 Oil Pits (FY02), SWMU 170 SWMU 149, by STEP, Inc. for the US Army Corps of Engineers, Nashville District, Nov
- Geophysical Investigations at Campbell Army Airfield, Geophysical Investigations at Campbell Army Airfield, by Argonne National Laboratory
- 11/2002, Final: Data Summary for RCRA Addendum 5H to the Generic Work Plan for the Phase IV RCRA Facility Investigation at Campbell Army Airfield for SWMU 41, SWMU 41, by STEP Inc. for the US Army Corps of Engineers, Nashville District, Nov

2003

- Final data Summary for Resource Conservation and Recovery Act Facility Investigation at Solid Waste Management Unit 166, UST 5628
Addendum 15B to the Generic Work Plan, SWMU 166, UST 5628, by STEP, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Final Data Summary RCRA RFI at SWMU 27 (Abandoned Open Burning / Open Detonation), Addendum 30 to the Generic Work Plan, SWMU 27, Addendum 30 to the Generic Work Plan, by STEP, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Final Data Summary for Resource Conservation and Recovery Act Facility Investigation for Area of Concern D, Bulk Fuel Storage, Addendum 15B to the Generic Work Plan, AOC D, Bulk Fuel Storage, by STEP, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Final Data Summary for RCRA Site Investigation at SWMU 11, Landfill 11, SWMU 11, by STEP, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Final Data Summary for Resource Conservation and Recovery Act Facility Investigation and Soil Removal for Solid Waste Management Unit 32, Golf Course Pesticide Mixing Area, Addendum 3a to the Generic Work Plan, SWMU 32, Addendum 3a to the Generic Work Plan, by STEP, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Final Data Summary for Soil Removal at Solid Waste Management Unit 146, Blivet Repair Facility, Addendum 8B to the Generic Work Plan, SWMU 146, Addendum 8B to the Generic Work Plan, by STEP, Inc. for the US Army Corps of Engineers, Nashville District, Jan
- Final: Data Summary for Soil Removal and Investigation at AOC I, Contractor's Equipment Yard, AOC I, by STEP Inc. for US Army Corps of Engineers, Nashville District, Feb
- Final Report Maintenance and Reconstruction of Abandoned Dump 16 (SWMU 152, Joe Swing Pool Dump) and Abandoned Dump 17 (SWMU 141), FY02, SWMU 152, SWMU 141, by STEP, Inc. for the US Army Corps of Engineers, Nashville District, Feb
- Final Data Summary for RCRA Investigation and Confirmatory Sampling at SWMU 48, Wastewater Sludge Dump FY02, SWMU 48, by STEP, Inc. for the US Army Corps of Engineers, Nashville District, Mar
- Final Report Maintenance and Reconstruction of Abandoned Dump (SWMU 11), SWMU 11, Maintenance and Reconstruction, by STEP, Inc. for the US Army Corps of Engineers, Nashville District, Mar
- Final: Data Summary for the Phase IV RCRA Facility Investigation at Campbell Army Airfield Bravo Parking Apron Ft. Campbell, Kentucky, Bravo Parking Apron, by STEP, Inc. for the US Army Corps of Engineers, Nashville District, Apr
- Final Data Summary, Phase II RCRA/RFI for SWMU 50, Range 31 Disposal Area, Addendum 22 to the Generic Work Plan, (First sent out in October 2001 and revised in 1/2002 and 5/2003), SWMU 50, (First sent out in October 2001 and revised in 1/2002 and 5/2003), by STEP, Inc. for the US Army Corps of Engineers, Nashville District, May

2003 (continued)

- Final Corrective Measures Study for Solid Waste Management Unit 138, PX Service Station, Revision 1, SWMU 138, by STEP, Inc. for the US Army Corps of Engineers, Nashville District, May
- Final Data Summary for Resource Conservation and Recovery Act Investigation and Confirmatory Sampling Solid Waste Management Unit 154 (Acid Pits), FY02, SWMU 154 (Acid Pits), by STEP, Inc. for the US Army Corps of Engineers, Nashville District, May
- Final Data Summary for RCRA Interim Remedial Action for 18 Oil/Water Separators. Addendum 14C to the Generic Work Plan (FY02), Oil / Water Separators (18), Addendum 14C, by STEP, Inc. for the US Army Corps of Engineers, Nashville District, May
- Final, Year-End Report of the 2002 Quarterly Groundwater Sampling Results Ft. Campbell Kentucky, Final, 2002 Quarterly Groundwater Sampling Results, by STEP, Inc. for the US Army Corps of Engineers, Nashville District, May
- RFI and Phase II ESA OWS Sites, SWMU's 155C,71,58,, 56,61,67,70,155AM, by BHATE, Inc. for the US Army Corps of Engineers, Nashville District, June
- RFI and Phase II ESA OWS Sites, Data Summary Appendices, SWMU's 155C,71,58,, 56,61,67,70,155AM, by BHATE, Inc. for the US Army Corps of Engineers, Nashville District, Jun
- Final Data Summary for Resource Conservation and Recovery Act Investigation at SWMU 170 (Lube Racks) Fiscal Year 2002, SWMU 170, by STEP, Inc. for the US Army Corps of Engineers, Nashville District, Jun
- Final Data Summary for Campbell Army Airfield Master RCRA Facility Investigation, Phase V, Free Product Recovery at AOC A, AOC A; Phase V, by STEP, Inc. for the US Army Corps of Engineers, Nashville District, Jun
- Letter Update for Activities at AOC O, Ft. Campbell, Kentucky, AOC O, by STEP, Inc for the US Army Corps of Engineers, Nashville District, Oct
- Ft. Campbell: Copies of Boring and Well Construction Logs/Various Solid Waste Management Units, Volume I, Well Construction, Logs, by STEP, Inc for the US Army Corps of Engineers, Nashville District, Nov
- Ft. Campbell: Copies of Boring and Well Construction Logs/Various Solid Waste Management Units, Volume II, Well Construction, Logs, by STEP, Inc for the US Army Corps of Engineers, Nashville District, Nov
- Ft. Campbell: Copies of Boring and Well Construction Logs/Various Solid Waste Management Units, Volume III, Well Construction, Logs, by STEP, Inc for the US Army Corps of Engineers, Nashville District, Nov
- 2003 CAAF Data Review, "CAAF Visualization", Living Document, CAAF Visualization that is a living document, by STEP, Inc for the US Army Corps of Engineers, Nashville District, Nov

2004

- Final 2002 Dye Trace Report, Ft. Campbell, Kentucky, 2002 Dye Trace Report, by ICF Consulting for US Army Corps of Engineers, Nashville District, Jan

2004 cont'd

- Tracer Tight Leak Test, 2003 Annual Testing, (3) Aboveground Storage Tanks, Tracer Job No. 20805M-AN03, AOC D (Bulk Fuel Farm), Tracer Testing, by Praxair Services, Inc for US Army Corps of Engineers, Nashville District, Jan
- Final Data Summary for Resource Conservation and Recovery Act Excavation and Removal at SWMU 149 Oil Pits (FY03), SWMU 149, by STEP Inc. for US Army Corps of Engineers, Nashville District, Feb
- Integration of Geotechnical Data at AOC-A, Supplemental Seismic Investigations at AOC-A, Seismic Investigations at SWMU 41, AOC-A, SWMU 41, by Argonne National Laboratory for U. S. Army Corps of Engineers, Nashville District, Mar
- Ft. Campbell Restoration Advisory Board Minutes, 1996 - Present, RAB Minutes, Restoration Advisory Board, May
- Final Data Summary For Chromium Plating Shop Investigation, SWMU 140, by BHATE, Inc. for the US Army Corps of Engineers, Nashville District, Jul
- Oil/Water Separator Investigation, Data Summary For Confirmatory Sampling, Oil Water Separator Investigation, by BHATE, Inc. for the US Army Corps of Engineers, Nashville District, Jul
- Final Data Summary for Free Product Recovery at Campbell Army Airfield, Fiscal Year 2003, CAAF, by STEP Inc. for US Army Corps of Engineers, Nashville District, Aug
- Kentucky Department for Environmental Protection Closure Application (Form KEP 7097C) For AOC O (155C), 155C (AOC O), by STEP Inc. for US Army Corps of Engineers, Nashville District, Aug
- Final Data Summary for Resource Conservation and Recovery Act Phase VI Investigation and Remediation at Campbell Army Airfield Ft. Campbell, CAAF, by STEP Inc. for US Army Corps of Engineers, Nashville District, Sep
- Final Year End Summary Report for the Quarterly Groundwater Sampling Results, Monitoring Program, by STEP Inc. for US Army Corps of Engineers, Nashville District, Oct

2005

- Final Data Summary for Excavation and Disposal of Soil at SWMU 33, Pesticide Mixing Area, Mar
- Final Data Summary for Resource Conservation and Recovery Act Excavation and Removal at SWMU 149 Oil Pits (FY03), Mar
- Enhanced Biodegradation of Chlorinated Ethenes in Groundwater Using Lactate and Metabolic Supplements at SWMU 2 and SWMU 21, Jun

2006

2002 Spring Chemistry Report, Mar

FORT CAMPBELL
INSTALLATION RESTORATION
PROGRAM
SITE DESCRIPTIONS

FCPB-07, SWMU 33

PESTICIDE MIXING & STORAGE FACILITY - TN

SITE DESCRIPTION

SWMU 33 is located on East End Road west of the wastewater treatment plant on the Old Clarksville Base, and operated from 1950-1985. It consists of a room within a building and a septic system with a leach field just outside the building. The room has a concrete floor and a sink that was used for the mixing of pesticides. Results from an RFI conducted in 1996 indicated risks to ecological receptors due to residual pesticides found in surface soils along the old surface drainage ditch. Pesticides, above MCLs, have been detected in groundwater at this site. A soil (31cy) removal was completed in Aug 2001, however residual contamination above risk-based screening levels remained.

In 2004, a soil removal was performed (100 cy) and soil samples were taken. No further action for soils was approved by TDEC in FY 2005. In April 2005 heptachlor epoxide was detected above its MCL at monitoring well 033-M01-S. In FY06, annual groundwater monitoring was conducted at three wells.

CLEANUP STRATEGY

Assuming the 2006 groundwater sample results are below MCLs, three additional rounds of groundwater samples will be required (FY07-FY09). Four consecutive sampling events with no exceedances of MCLs are required prior to requesting a NFA and well abandonment in FY10.

STATUS

Regulatory: RCRA

RRSE: Medium

CONTAMINANTS OF CONCERN:
Pesticides

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
RFA	199006	199008
CS	199504	199510
RFI/CMS.....	199504	200009
IRA	200010	200404
LTM	200409	201009

RC DATE: 200404

FCPB-09, SWMU 21

NBC FIRE TRAINING AREA - TN

SITE DESCRIPTION

This unit is located in an approximately 50 x 100 ft low area in a field just west of the nuclear, biological and chemical (NBC) training staging area, east of Range Road. From 1980 to 1990, JP-4 jet fuel, gasoline and other hydrocarbons were poured into a metal trough (~50 ft, still in place) and ignited for the training of soldiers on the use of fire as a weapon. An RFI conducted by Metcalf & Eddy between August 1992 and August 1993 noted that the constituents found in soil samples at the site did not correspond to the constituents found in groundwater at the site. The constituents found in the groundwater did correspond to those found in the groundwater from monitoring wells at the perimeter of SWMU 2. In FY02, an interim measure (enhanced bioremediation) was conducted at seven wells at FCPB-09 and FCPB-26. In FY03, two rounds of field GC samples were collected and data was evaluated to determine effectiveness of enhanced bioremediation. Data indicated that

TCE concentrations had dropped below the MCL. Groundwater samples collected in FY04 indicated TCE concentrations remained below MCL's. In FY05, groundwater monitoring continued. TCE was detected above the MCL in one well at FCPB-09 during a drought period. In FY06, annual groundwater monitoring was conducted at four wells.

CLEANUP STRATEGY

Assuming the 2006 groundwater sample results are below MCLs, three additional rounds of groundwater samples will be required (FY07-FY09). Four consecutive sampling events with no exceedances of MCLs are required prior to requesting a NFA and well abandonment in FY10.

STATUS

REGULATORY: RCRA

RRSE: High

CONTAMINANTS: Chlorinated Solvents

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
RFA	199006	199008
CS	199504	199507
RFI/CMS	199504	199709
CMI(C)	200201	200209
CMI(O)	200210	200410
LTM	200410	201009

RIP: 200209

RC: 200410

FCPB-10, SWMU 28 OLD OB/OD AREA- TN

SITE DESCRIPTION

SWMU 28 is an approximate 5 acre area surrounded by 10 to 12 ft high soil berms. The site is located off of McNair Road, adjacent to Old Clarksville Base. The site was used for detonation and burning of unexploded ordnance (from Old Clarksville Base) until the late 1960s. After that it was used as a dump for tires, appliances, pallets, and old blivets (rubber, water or fuel storage bags). In 1989, the tires and other materials were removed from the site. Much of the berm and interior area is void of vegetation. This site was fenced in 1996. During an RFI conducted in 1996, a ~700 x 400 ft RDX plume was detected in the shallow groundwater. The plume appears to be stable. Explosives were not detected in soil samples. In FY03, groundwater sampling had increased RDX levels in 3 wells. In FY04, six wells were sampled. RDX was detected at levels above TDEC state standards (Region IX PRGs). The concentrations in FY04 were comparable to FY03 concentrations. In FY05, six wells were sampled. Concentrations in four wells remained above state standards. In FY06, annual groundwater monitoring was conducted at five wells.

STATUS

REGULATORY: RCRA

RRSE: Low

CONTAMINANTS OF CONCERN:
RDX

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
RFA	199006	199008
CS	199504	199507
RFI/CMS.....	199504	200809
IRA	199605	199610
CMI(C).....	200810	200909
CMI(O).....	200910	201109
LTM	201110	201409

RIP: 200909

RC: 201109

CLEANUP STRATEGY

A CMS will be conducted along with semi-annual groundwater monitoring of RDX. It is assumed groundwater treatment for RDX will be required and will include semi-annual groundwater monitoring of 6 wells for 2 years. Site closure is expected in FY13 and 13 wells will be abandoned in FY14.

FCPB-24, SWMU 48 WASTE SLUDGE DUMP - TN

SITE DESCRIPTION

The sludge dump existed from the early 1970s and was located on an approximately 300 x 50 ft unpaved area along the access road to the wastewater drying beds. The unit was used to store sludge from drying beds. Some of the sludge was removed in 1991.

In 1995, an RFI conducted at FCPB-22 identified shallow soil and sediment contamination down gradient of FCPB-24. Additional sampling in FY99 determined there was no risk in surface water and sediment.

In FY02, 6 test pits were excavated and sampled. The analytical results were consistent with 1995 RFI results. Four of the six pits were found to be contaminated with Arochlor 1260 above Region IX PRGs, residential and industrial standards.

In FY06, land use and contaminant levels were evaluated to determine if the site qualified as low occupancy, as defined by the PCB Megarule. A draft report is expected to be issued in May 2006 with the final anticipated in July 2006.

CLEANUP STRATEGY

Land Use Controls will be implemented at the site indefinitely.

STATUS

REGULATORY DRIVER: RCRA

RRSE: Medium

CONTAMINANTS: PCBs

MEDIA OF CONCERN: Soil

Phases	Start	End
RFA	199006	199008
CS	199504	199507
RFI/CMS.....	199504	200603
LTM	200610	203609

RC: 200603

FCPB-26

SANITARY LANDFILLS 2 & 4 (SWMUS 2, 4) – TN

SITE DESCRIPTION

Prior to FY05, FCPB-26 through FCPB-30 were combined and addressed as one unit under the SWMUG concept as FCPB-26. The landfills are located east of Market Garden Road between 18th and 42nd Streets in one geographic area. They accepted all installation refuse from 1955-1985 including residential waste, paint, unauthorized construction debris, and TCE/JP-4 fuel-contaminated sludge. Daily and final cover conditions during operation are not known. The sites are currently covered with grass. The cover is maintained under the installation's maintenance and compliance program. As of FY05, FCPB-26 addresses only SWMU 2 and 4 due to detections of vinyl chloride above the MCL in some groundwater samples. In FY02, enhanced bioremediation was conducted at Landfill 2 to address the chlorinated solvent contamination. Vinyl chloride was above the MCL in one well (004MW001) at SWMU 4 during FY04. In FY05, vinyl chloride dropped below the MCL at SWMU 4. In FY06, annual groundwater monitoring was conducted at six wells.

CLEANUP STRATEGY

Assuming the 2006 groundwater sample results are below MCLs, two additional rounds of groundwater samples will be required (FY07-FY08). Based on the groundwater sample results, no further action will be requested for the sites.

STATUS

REGULATORY: RCRA

RRSE: High

CONTAMINANTS: VOCs

MEDIA OF CONCERN:
Groundwater

PHASES	Start	End
RFA	199006	199008
CS	199504	199507
RFI/CMS.....	199504	200201
IRA	200112	200305
LTM	200310	200809

RC: 200305

CAMPBELL ARMY AIRFIELD - KY

FCPB-38

(PAGE 1 OF 3)

SITE DESCRIPTION

Campbell Army Airfield (CAAF), the Army's largest airfield, is located in the northeastern corner of Ft. Campbell. The karst geology creates a high potential for contaminants/free product to migrate off-post during extreme water level variation. Due to complex groundwater flow patterns, critical off-site releases could occur. Based on the review of an RI/FS conducted by Dames & Moore in 1992, IRAs and FSs were conducted at selected areas within the CAAF. Additional focused studies were required to determine the extent of the JP-4, JP-8 and chlorinated solvent contamination and groundwater movement at the Airfield. The tank farm, (Outfall H), and the underground concrete collection vault (Outfall C) were investigated as part of the site characterization. Previous dye traces have shown at least three apparent groundwater basins/flow patterns. Inventories, past practices and previous findings indicate release of a large volume of contaminants from multiple sources.

A free product recovery system was initiated December 1992 as an interim measure. Over time the system was expanded. Further characterization studies are ongoing to determine a final RA.

In FY96 a groundwater sampling program was initiated to further isolate and define the source of the contamination.

During FY97, the Commonwealth of Kentucky classified the CAAF as a SWMUG. This action included all SWMUs located within and directly adjacent to the airfield. This SWMUG includes AEDB-R #: FCPB-03, 04, 19, 35, 36, 38, 39, 59, 60, and 62. Specific site details for each site can be found in the Response Complete Site Section. Groundwater contamination at the SWMUG was confirmed and a high relative risk rating was assigned. All sites were investigated under the CAAF Master RFI to determine if they are contributing to known groundwater contamination. If any site is determined to be a contributor to the groundwater contamination, it will be included in the SWMUG remedial action plan and if not a contributor, appropriate actions will be taken to classify it as RC.

Activities for FY97 included the initiation of a lineament, fault trace and depression analysis in conjunction with a geophysical program at AOC A and the south end of the runway.

STATUS

REGULATORY DRIVER: RCRA

RRSE: High

CONTAMINANTS OF CONCERN:
Chlorinated Solvents, POLs, Metals

MEDIA OF CONCERN: Soil,
Groundwater

Phases	Start	End
RFA	198201	198207
CS	199504	199612
RFI/CMS.....	199710	200809
IRA	199206	200909
CMI(C).....	200910	201009
CMI(O).....	201010	201509
LTM	201510	202109

RIP: 201010

RC: 201509

SITE DESCRIPTION

All available data from previous studies were consolidated for inclusion in a comprehensive database. A regional potentiometric surface map was produced during FY97. Also during FY97, a groundwater symposium was held to review and analyze known groundwater characteristics and receive input and peer review from karst geology experts.

FY98 activities included additional geophysical surveys, GW monitoring, a second GW symposium, issue of the Final Potentiometric Surface Map (Dry Conditions), and initiation of the Master RI. FY99 activities included additional soil and GW sampling, trace test, ground truthing of geophysical data, third GW symposium, removal of 100 ft of pipeline, visually inspected piping joints between Pump House 1 and 2, and assembled the 1st CAAF visualization for review and interpretation by team members. An additional 2 potential sources, in and around Bldgs 7173 & 7176, were identified and were characterized. Neither building was determined to be a source of contamination.

In FY00, activities included a Soil Vapor Extraction (SVE) pilot study, soil and GW sampling, geophysical investigation, quarterly GW monitoring, weekly water level testing, placement of rip-rap at the outfall of AOC G & H, soil removal at AOC B, and some tank, line, joint and valve verification, testing and removal.

In FY01, activities included design and implementation of SVE at hangars 3 and 4 which included the installation of 20 extraction wells and removal of more than 10,000 equivalent gallons of fuel.

In FY02, an additional 25,000 equivalent gallons of fuel were extracted, a government owned SVE system was installed, 50 extraction wells were installed, 2 wells were installed at SWMU 41 and a soil gas survey was performed at Bravo Apron and AOC D.

In FY03, the government owned SVE system removed ~30,171 equivalent gallons of product in 39 weeks of operation. Eighteen additional extraction wells were installed and mobile vacuum extraction removed an additional 7,196 equivalent gallons of product. Other FY03 activities included; soil removal and a pilot study of groundwater treatment (HRC injection) for chlorinated solvent at FCPB-35/36 (SWMU 12/15), a trench investigation at FCPB-04 (AOC B), soil sampling at Hangar 2 and 4, and groundwater monitoring at FCPB-03, 35, 36, 38 and 41. An off-site spring, Quarles, is sampled monthly for petroleum related contaminants. In the past TPH has been detected in the spring sediments.

In FY04, the fixed and mobile SVE systems removed ~40,519 equivalent gallons of product.

CAMPBELL ARMY AIRFIELD – KY

FCPB-38

(PAGE 3 OF 3)

During FY05, HRC was injected at Hangar 2 and CAAF 49 to address TCE contamination. A strategy for petroleum delineation at the airfield was completed in FY05. The fixed multi-phase extraction system was temporarily discontinued 15 Feb 2005 and resumed operations in May 2005. During this period water level and free product thickness measurements were recorded on a weekly basis. In FY05 ~28,014 equivalent gallons, 26,838 gallons vapor phase and 1,176 gallons free phase, product were removed. Approximately 96% of the equivalent gallons produced by the system were recovered as vapors. To date, a total of ~151,858 equivalent gallons of product have been removed since multi-phase extraction began. A scope of work to outline the approach to delineate the extent of free product was also completed in 2005. A field program consisting of the installation of 72 borings for visual confirmation of product and TPH field screening was started in January 2006. As part of this field program, approximately 24 monitoring wells were installed to determine if product is present in the groundwater. The new wells were sampled in April 2006.

CLEANUP STRATEGY

Complete consolidation and analysis of the historical and site characterization data, refine the site conceptual model(s), identify data gaps, develop a plan for investigation of the data gaps, and commence investigation of those data gaps determined to be critical to the overall characterization of the CAAF groundwater basin. This plan will address protection of receptors potentially impacted from CAAF groundwater. The following actions may be implemented: groundwater/surface water monitoring, soil treatment, a water treatment system, investigation into the use of natural attenuation and/or other innovative technologies and exploratory borings/wells. A combination of contaminant removal, SVE and groundwater treatment programs, followed by annual groundwater sampling at 50 wells for 5 yrs may be required to take this site to closure.

FCPB-43, SWMU 140

CLARKSVILLE BASE CHROMIUM PLATING SHOP

– TN

(PAGE 1 OF 2)

SITE DESCRIPTION

SWMU 140 consisted of a weapons refurbishing shop and a nuclear implosion structure located in Building 7811 within the Old Clarksville Base. Although the site is referred to as a chromium plating shop, chrome plating operations never occurred at this facility. It is located immediately up-gradient of a wetland and Little West Fork Creek. Past practices at this site include the formulation of nuclear components for storage. Operations were changed in 1965 to a weapons refurbishing and metal cleaning facility, which was closed in 1993. The facility was designed and constructed to accommodate this type of operation. Groundwater tracing in 1997 has shown a hydrologic connection between this site and Little West Fork Creek. The source of TCE is likely to be from the floor drains located in the area of the degreaser. FY98 actions included installing 3 monitoring wells, sampling the 3 new wells and one existing well and sampling soil at 12 locations. TCE was detected in groundwater above the MCL, however, TCE was not detected in the soil. Three groundwater monitoring wells were installed in FY01.

In January 2002, the Phase II RFI report was finalized, TCE was present in groundwater and was detected in one well above the MCL. Lead was also present above MCLs in two wells. Subsequent filtered samples showed the lead was attached to the clay particles, not migrating, and no longer a concern.

In FY03, two additional wells were installed and sampled for VOCs in an area down-gradient from the former weapons refurbishing shop. Four soil borings were completed beneath the floor of the building in the plating shop area. One additional soil boring was completed adjacent to the newly discovered UST, near the east end of the building. It was determined that the UST was a water holding tank connected to the floor drains in the nuclear implosion structure area. Soil samples were analyzed for VOCs. TCE was detected in the newly installed wells at concentrations above the MCL. The highest detection of TCE was 91ppb (MCL is 5) in well # 9. Soil samples showed no detections of TCE in exceedance of action levels. A RFI addendum was completed. In FY04, groundwater monitoring continued.

STATUS

REGULATORY DRIVER: RCRA

RRSE: Medium

CONTAMINANTS OF CONCERN:
VOCs

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
RFA	199504	199607
CS	199504	199703
RFI/CMS.....	199704	200709
CMI(C)	200710	200809
CMI(O)	200809	201009
LTM	201009	201109

RIP: 200809

RC: 201009

FCPB-43, SWMU 140 CLARKSVILLE BASE CHROMIUM PLATING SHOP – TN

(PAGE 2 OF 2)

Two new wells were installed in FY05 and groundwater monitoring was conducted at eight wells on a semi-annual basis. In samples collected in November 2005, TCE was detected in monitoring well 140MW009 at 120ppm.

In FY06, semi-annual groundwater monitoring was conducted at eight wells. Groundwater monitoring will continue and results will be evaluated to determine if another monitoring well is required to determine nature and extent of contamination.

CLEANUP STRATEGY

A CMS will be performed in FY07. Enhanced bioremediation may be required to remediate TCE in the groundwater, followed by semi-annual groundwater monitoring at seven wells. Site closure is expected in FY11 and 11 wells will be abandoned.

FCPB-48, SWMU 145 OLD SKEET RANGE-TN

SITE DESCRIPTION

This one acre site is no longer in operation as a skeet range. The site is adjacent to a community recreational area. The site is bounded on the north side by Fletcher's Fork Creek and on the south by a MWR community area. Results of the PA/SI revealed levels of PAHs that pose a potential risk to human health and the environment. A field investigation to delineate extent of contamination was conducted and the area was fenced in FY98. An ecological risk assessment began in FY00. The IRA for FY01 consists of removal of surface clay pigeon particles and re-grading and re-vegetating the area.

While preparing the statement of basis for the site in FY06, TDEC determined that the final remedy at the site was inadequate. Due to contamination of SVOCs in the sediment at Fletcher's Fork Creek above EPA Region VIII PRGs, signs and surface water sampling will be required as part of the final remedy.

STATUS

REGULATORY: RCRA

RRSE: Medium

CONTAMINANTS: SVOCs

MEDIA OF CONCERN: Soil,
Sediment, Surface Water

PHASES	Start	End
RFA	199504	199607
CS	199504	199709
RFI/CMS.....	199910	200106
IRA	199710	200109
LTM	200610	203609

RC: 200109

CLEANUP STRATEGY

Land use controls will be implemented at this site and annual surface water samples will be taken at Fletcher's Ft. Creek. It is assumed that 30 years of land use controls and monitoring will be required at the site.

FCPB-49, SWMU 146

BLIVET REPAIR AREA BLDG 7820- TN

SITE DESCRIPTION

This 3-acre area was used to repair portable, neoprene fuel bladders containing JP-4 fuel and diesel fuel. The damaged fuel bladders were stored on the ground without being emptied of fuel residue. This residue was released onto the ground both outside and inside the repair facility. This disposal practice was discontinued in 1982. The site is located on top of a hill in the Old Clarksville Base surrounding Building 7820 and is up gradient from Little West Fork Creek. Dye tracing, spring reconnaissance, spring sampling, spring gauging, screening risk assessment, and well monitoring were completed and results indicate that groundwater is contaminated with POLs. In FY99, a Phase I RFI was conducted and identified extensive POL groundwater and soil contamination. The Phase II RFI was completed in FY00. Samples showed TPH and benzene in the groundwater. Air sparging of the groundwater was started in FY02. In Oct 2002, a soil removal action (~500cy) was completed. The air sparging system was turned off so that this site could be used as an ORC test area. ORC was applied to the open pit prior to backfilling, as a pilot test. A well was installed in FY03, and was dry. In FY04, an additional well was installed to replace the dry well installed in FY03. One round of sampling was collected and one well (146MW003) showed contamination over Tennessee UST action levels. In FY05, no further action for soils was approved by TDEC. 146MW003 is sampled semi-annually. In FY06, semi-annual monitoring was conducted.

CLEANUP STRATEGY

Assuming the 2006 groundwater sample results are below UST cleanup standards, two additional rounds of groundwater samples will be required (FY07). Four consecutive sampling events with no exceedances of UST cleanup standards are required prior to requesting a NFA and well abandonment.

No further action is anticipated in FY08 and 9 wells will be plugged and abandoned.

STATUS

REGULATORY DRIVER: RCRA

RRSE: High

CONTAMINANTS OF CONCERN:
VOCs, SVOCs, POLs

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
RFA	199504	199607
CS	199504	199703
RFI/CMS.....	199704	200306
IRA	200010	200109
CMI(C).....	200201	200306
CMI(O).....	200410	200809

RIP: 200306

RC: 200809

FCPB-52, SWMU 149 OIL PITS – KY/TN

SITE DESCRIPTION

There are 40 abandoned oil pits and 3 inflammable material storage sheds (no drainage) within the post cantonment area, where vehicle maintenance was performed. These oil sites are located between 1st Street in the southern portion of the Main Cantonment Area and 59th Street (18 are in TN, 22 are in KY). The oil pits supported POL storage and were disposal sheds, ~10 x 10 ft in size. The foundation of each shed consisted of a concrete slab with up to 5 sumps covered by metal grates which directed oil to a French drain. Groups of two to five sheds drained into a common gravel pit. All sheds were removed, some slabs and grates still exist, and the gravel pits are covered with soil. These sites were in operation between 1942 and the mid 1980s. In FY98, soil samples were collected at 35 sites. VOCs and SVOCs were detected at 4 of these sites. In FY99, a trench investigation was conducted at Oil Pits 149 A & F. It was determined that 149 F did not exist. Oil Pit 149 A and most of the contaminated soil (VOCs, SVOCs and TPH) were removed. The groundwater at 149 A is contaminated with lead and TPH above action levels. PCBs have also been detected in the sludge in the drain basins. Monitoring well one at 149A contains floating product. In FY00, an intrusive trench investigation was conducted at 15 sites (149 C, H, J, M, N, P, Z, AA, BB, CC, EE, FF, HH, KK, MM), a subsurface investigation was performed at 2 sites (149 A, F) and 2 pits were removed (149 LL, NN). In FY01, 6 oil pits were removed (149 C, N, P, Z, CC, KK). In FY02, 6 more oil pits were removed (149 D, E, K, Q, R, G). In FY03, 8 oil pits were removed. By FY03 eighteen pits (149 F, G, H, J, L, M, Q, T, U, Z, AA, BB, EE, FF, HH, LL, MM, NN) had been approved for NFA. In FY04, two oil pits were approved for NFA (149B and 149O). In Dec 2005, two sites (149 I, II) were recommended for institutional controls and NFA was approved for six additional pits (149 S, T, U, V, W, Y). In Mar 2006, the four remaining oil pit structures were removed (149 DD, GG, JJ, X) and results are pending.

CLEANUP STRATEGY

RFI (soil borings) to determine vertical extent of contamination at 10 sites (149 C, D, E, K, N, P, R, UU, VV, WW) is currently underway. A CMS at 11 oil pits (149 A, C, D, E, K, N, P, R, UU, VV, WW) will be conducted. It is assumed that the CMS will recommend in-situ treatment (ORC injection) of soil and/or groundwater at 11 sites followed by groundwater monitoring to support the MNA determination. Site closure is expected in FY13 and 23 wells will be abandoned.

STATUS

REGULATORY DRIVER: RCRA

RRSE: High

CONTAMINANTS OF CONCERN:
SVOCs, Metals, PCBs, POLs

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
RFA	199504	199607
CS	199504	199703
RFI/CMS	199704	200909
IRA	199912	200509
CMI(C)	200910	201009
CMI(O)	201009	201109
LTM	201109	201409

RIP: 201009

RC: 201109

FCPB-58, SWMU 153 DEMOLITION AREA 18 - TN

SITE DESCRIPTION

This site consists of an abandoned quarry, of approximately 5 acres, which was subsequently used as an explosive demolition area through the early 1980's. The site is bounded on the north by Mabry Road, the south by Engineers Road and on the east by Palmyra Road. The area is somewhat sparse of vegetation and has eroded to some extent. Piney Fork Creek flows along the southern edge of the area and empties into Little West Fork Creek some distance down stream of the site. Little West Fork Creek contributes to the installation's drinking water supply. Surface water and sediment samples show no adverse impact from activities at the site. In FY98, six soil borings (three were converted to groundwater wells), and four surface water sediment pairs were taken. Soil samples contained explosives below action levels. RDX was detected in two groundwater wells above PRGs. FY99-FY04, semi-annual groundwater monitoring was conducted at the site. In FY05, LC/MS was performed and verified the presence of explosives in the groundwater. In FY06, semi-annual groundwater monitoring was conducted at three wells.

STATUS

REGULATORY DRIVER: RCRA

RRSE: High

CONTAMINANTS OF CONCERN:
RDX

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
RFA	199504	199607
CS	199610	199701
RFI/CMS.....	199701	200109
LTM	200110	200809

RC: 200109

CLEANUP STRATEGY

Assuming the 2006 groundwater sample results are below Region IX PRGs, one additional round of groundwater samples will be required in FY07. Four consecutive sampling events with no exceedances of Region IX PRGs are required prior to requesting NFA and well abandonment.

FCPB-64, SWMU 170 LUBE RACKS – KY/TN

SITE DESCRIPTION

This site consists of 81 lubrication/inspection racks designed during World War II for the primary purpose of facilitating the inspection of motorized vehicles. They were also used to facilitate motor oil changes. Based on the demolition and inspection of some in recent years, large amounts of oil were discharged to the soil beneath the racks.

In FY00, an installation wide inventory of vehicle racks including visual inspection and records search was conducted. Twenty-three (23) of the 81 racks are active and therefore not eligible for IRP funds. The remaining 58 racks are eligible for ER,A funds. Of the 58 remaining sites, 43 sites do not have structures, 15 have structures.

In FY01, confirmatory soil sampling was conducted at three sites in TN (170A, B, D). Service rack 170A and associated contaminated soil was removed.

In FY02 preliminary soil gas sampling at 20 rack locations (170Z 1, 3, 5, 6, 10, 14, 15, 16, 17, 19, 20, 21, 22, 23, 37, 38, 40, 41, 42, 43,) was completed. Seventeen (170Z 1, 3, 5, 10, 14, 15, 16, 17, 19, 20, 21, 37, 38, 40, 41, 42, 43) of the 20 were recommended for CS.

In FY03, a CS was performed at the seventeen sites investigated in FY02 and soil-gas surveys, in addition to CS, were conducted at 23 sites (170Z 2, 4, 7, 8, 9, 11, 12, 13, 18, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 39). Of the 40 total sites investigated in FY03, 38 were recommended for NFA (in KY 170Z12, Z13, Z17, Z18, Z19, Z20, Z24 – Z36 in TN 170 Z1 – Z5, Z7, Z8, Z10, Z14, Z15, Z16, Z37 – Z43), as no contaminants were detected above action levels. At the remaining two sites, TPH was detected at one TN site. A letter granting NFA was sent to TDEC in April 2006. A CMS was conducted at 170Z11 using FY05 funds, and a draft report was issued in April 2006.

CLEANUP STRATEGY

12 sites with structures (170 B, C, D, G, I, W, X, Y, Z, AA, BB, CC) will be investigated and any contamination above action levels will be removed. Two of the 14 sites have been characterized (170 B & D).

It is assumed that a CMS will be required at 6 sites (170 A, B, F + 3 from RFI) In-situ treatment is expected at all 6 locations in addition to 170Z11, with residual contamination followed by annual groundwater monitoring of 18 wells. Site closure to include is expected in 2014.

STATUS

REGULATORY DRIVER: RCRA

RRSE: Medium

CONTAMINANTS OF CONCERN:
POLs

MEDIA OF CONCERN: Soil

PHASES	Start	End
RFA	200006	200008
CS	200008	200012
RFI/CMS	200209	201009
IRA	200110	200209
CMI(C)	201009	201109
CMI(O)	201109	201309
LTM	201309	201409
RIP: 201009		
RC DATE: 201209		

FCPB-65, SWMU 171 FORMER SKEET RANGE - TN

SITE DESCRIPTION

These two former skeet ranges are located on Screaming Eagle Blvd just north of the Range Control building (Building 6087). The skeet ranges occupied approximately eight acres, and were used from the early 1940s to the 1960s for recreational skeet shooting.

Contaminants of concern include PAHs from the clay skeet targets and lead from shot. Results from the confirmatory sampling in September 2001 indicate surface soil is impacted by PAHs and lead above Region IX industrial PRGs.

CLEANUP STRATEGY

Additional delineation of soil contamination is planned. A CMS will be performed. It is assumed that a soil removal (6400 cy) will bring the site to closure.

STATUS

REGULATORY DRIVER: RCRA

RRSE: High

CONTAMINANTS OF CONCERN:
PAHs, Lead

MEDIA OF CONCERN: Soil

Phases	Start	End
RFA	200006	200009
CS	200010	200109
RFI/CMS	200610	200709
CMI(C)	200610	200709

RC: 200709

IRP No Further Action Sites Summary

AEDB-R #	Site Title	Documentation/Reason for NFA	NFA Date
FCPB-01	Waste Oil Dumping Area, SWMU 10 – TN	State letter (TDEC) 8/29/95	199507
FCPB-02	Woodlawn Landfill, SWMU 13	LTM being performed by installation	199008
FCPB-03	Construction Debris Landfill, SWMU 14 – KY	Moved out of ER,A	199808
FCPB-04	JP 4 Spill, AOC B – KY	Combined with FCPB-38	199808
FCPB-05	Battery Maintenance Facility (BLDG 6530), SWMU 22	State letter (KDEP) 3/7/03	199607
FCPB-06	Sabre Heliport Dumpsite, SWMU 31-TN	State letter (TDEC) 6/27/88	199006
FCPB-08	Abandoned Waste Oil Tank, SWMU 36	State letter (KDEP) 8/18/00	199008
FCPB-14	DPW Pesticide Mixing Area, SWMU 35	EPA letter 12/28/97	199507
FCPB-15	Golf Course Pesticide Mixing Area, SWMU 32-TN	Active site, not eligible for ER,A	199709
FCPB-16	PCB Storage Area, SWMU 19-TN	State letter (TDEC) 8/29/95	199509
FCPB-17	Former DS2 Storage Area, SWMU 20-TN	State letter (TDEC) 8/29/95	199703
FCPB-18	Satellite Accumulation Areas, SWMU 37A-AP – TN	Site mistakenly included in IRP - Unable to locate	199808
FCPB-19	Temporary Oasis Rapid Refueling Area, SWMU 41 – KY	Combined with FCPB-38	199909
FCPB-20	Shooting Range 31, SWMU 50 – KY	State letter (KDEP) 6/5/03	200309
FCPB-21	Satellite Waste Oil Buffalo (Tanks), SWMU 42 – KY/TN	State letter TDEC 8/29/95 and KDEP 12/28/94	199709
FCPB-22	Wastewater Drying Beds, SWMU-47	State letter (TDEC) 3/5/02	199601
FCPB-23	Battery Maintenance Facilities SWMU 24/25 – TN	State letter (TDEC) 5/29/01	199709
FCPB-25	OB/OD Area, SWMU 27	Not eligible for ER,A	199512
FCPB-27	Sanitary Landfill #2, SWMU 2	Funded under FCPB-26	199709

AEDB-R #	Site Title	Documentation/Reason for NFA	NFA Date
FCPB-28	Sanitary Landfill #3, SWMU 3	Not an ER,A Site	199709
FCPB-29	Sanitary Landfill #4, SWMU 4	Funded under FCPB-26	199709
FCPB-30	Sanitary Landfill #5, SWMU 5	Not an ER,A Site	199709
FCPB-31	Construction Debris Landfill #6, SWMU 6 – KY	Moved out of ER,A	199709
FCPB-32	Construction Debris Landfill #7, SWMU 7 – TN	Moved out of ER,A	199809
FCPB-33	Sanitary Landfill #8, SWMU 8 – TN	Moved out of ER,A	199809
FCPB-34	Sanitary Landfill #9, SWMU 9 – TN	Moved out of ER,A	199709
FCPB-35/36	Old Fire Training Area & Fire Training Area – KY	Combined with FCPB-38	200212/199709
FCPB-37	Sanitary Landfill #11, SWMU 11 – TN	Moved out of ER,A	199709
FCPB-39	Diesel Spill, AOC C – KY	Combined with FCPB-38	199809
FCPB-40	801 st Motor Pool Gravel Pits (4 Sites), SWMU 134-137 – TN	State letter (TDEC) 7/14/00	200009
FCPB-41	PX Service Station, SWMU 138	Not eligible for ER,A	199601
FCPB-42	Clarksville Base Waste Burial Area, SWMU 139 – TN	State letter (TDEC) 11/6/97	199709
FCPB-44	Construction Debris Landfill, SWMU 141 – TN	Combined with FCPB-26, moved out of ER,A	199709
FCPB-45	Soil Incineration Area, SWMU 142 – TN	State letter (TDEC) 11/6/97	199709
FCPB-46	DPW Paint She, SWMU 143	State letter (TDEC) 11/6/97	199601
FCPB-47	Post Laundry Building 860, SWMU 144 – TN	State letter (TDEC) 8/24/04	199803
FCPB-50	Sabre Drum Storage Area (Bldg 6636) SWMU 147	State letter (TDEC) 2/4/03	199601
FCPB-51	Clarksville Base Fire Training Area, SWMU 148 – TN	Closed in IRP – included in the Installation Master Plan	200309
FCPB-53	UST Soil Clean Up, SWMU 150 – TN	State letter (TDEC) 3/20/01	200109

AEDB-R #	Site Title	Documentation/Reason for NFA	NFA Date
FCPB-54	UST Soil Clean Up, SWMU 151 A-D – KY/TN	State letter (TDEC) 6/13/97, 4/10/97 and 3/6/97, State letter (KDEP) 6/27/97	199505
FCPB-55	Nuclear Storage Facility (Abandoned), AOC E – TN	State letter (TDEC) 8/20/99	199709
FCPB-56	Remove & Investigate HW Oil Tanks, SWMUs 95-99	NFA in HSWA Permit	199608
FCPB-57	Demolition Landfill (Joe Swing Pool), SWMU 152 – TN	Closed in IRP – included in the Installation Master Plan	200209
FCPB-59	Outfall C (Fuel Pits), AOC G-KY	Combined with FCPB-38	199808
FCPB-60	Outfall H (Tank Farm), AOC H – KY	Combined with FCPB-38	199808
FCPB-61	DRMO Scrap & Salvage Area, SWMU 49	NFA in HSWA Permit	199607
FCPB-62	CAAF Acid Pits, SWMU 154 – KY	State letter (KDEP) 10/23/03	200309
FCPB-63	Abandoned WWFT Old Clarksville Base, SWMU 160 – TN	State letter (TDEC) 3/14/00	199909

Initiation of IRP: The Installation Restoration Program at Ft. Campbell formally began with the RCRA Facility Investigation of Campbell Army Airfield in 1988.

Past Phase Completion Milestones

1982

- PA/SI – Installation, Jan

1990

- RFA – Installation, Aug

1991

- RI - Campbell Army Airfield (FCPB 38), Jul
- the completion of the CAAF RCRA Facility Investigation Report, Apr

1992

- FS Report (Draft Final) - Campbell Army Airfield (FCPB 38), Jan
- IRA - Campbell Army Airfield (FCPB 38), Dec
- the completion of the Draft Final CAAF FS Report, Jan

1993

- SWMU Confirmatory Sampling Field Work at FCPB Numbers: 1-8, 16-19, 21-24, 26-34, 37, 39 – Aug
- SWMU RCRA Facility Investigation Field Work at FCPB Numbers: 9, 10, 14, 15, 20, 25, 35, 36, 38, 40 – Aug
- SWMU Confirmatory Sampling Report (Draft) on FCPB Numbers: 1-8, 16-19, 21-24, 26-34, 37, 39 – Nov
- SWMU RCRA Facility Investigation Report - Phase 1 (Draft) on FCPB Numbers: 9, 10, 14, 15, 20, 25, 35, 36, 38, 40 - Nov

1995

- FS Report (Final) - Campbell Army Airfield (FCPB 38), Jul
- the completion of the Confirmatory Sampling and RFIs Reports, Jul

1996

- PA/SI Report (Final) on FCPB Numbers: 41 – 52, - Mar
- RI/FS Phase I - FCPB-43 – Jan
- RI/FS Phase I - FCPB-47 – Apr
- Historical Photos Analysis of Cantonment Area (FCPB-52) – Apr
- RI/FS - Risk Assessment - FCPB-48 – Apr
- IRA - FCPB-48 – Apr

- PA/SI Report (Final) on FCPB Numbers: 42 – 54, Jun
- RI/FS Report (Draft) on FCPB Numbers: 5, 7, 10, 18 - 24, 26 – 36, Jul
- RI/FS Phase I (Draft) - FCPB-52, Dec

1998

- Historical Photo Analysis of Old Clarksville Base - FCPB-49, Mar
- Installation Risk Assessment Strategy Document (Draft), May

1999

- Phase I Ground Truthing Report - FCPB-38 – Jan
- RI/FS Phase II - FCPB-52 – Jun
- Installation Risk Assessment Strategy Document (Final) – Aug
- Master RFI (Draft) - FCPB-38 – Aug
- RI/FS Phase I (Draft) - FCPB-49 - Sep

2000

- Removal/Subsurface Investigation of Inactive Fuel Lines - FCPB-38 – Mar
- RI/FS - FCPB-63 – Mar
- SVE Pilot Test - FCPB-38 – May
- the soil vapor extraction pilot test at CAAF was completed, May
- RI/FS Phase II - FCPB-40 – Aug
- Phase I RCRA Facility Investigation/ Confirmatory Sampling at CAAF – FCPB-38 - Dec

2001

- Phase III RCRA Confirmatory Sampling at 17 Oil Pits, SWMU 149 – Jan
- RCRA Confirmatory Sampling at Area of Concern L, Lubrication Racks – Jul
- Phase III RCRA Facility Investigation/Confirmatory Sampling at Campbell Army Airfield for AOC A (Engine Test Facility) and AOC D (Bulk Fuel Farm) – Jul
- Interim Remedial Actions at AOC B, AOC G and AOC H – Sep
- Phase III RCRA Facility Investigation at Solid Waste Management Units 149A and 149F, Oil Pits – Oct
- Phase I RCRA Facility Investigation, Underground Storage Tank Soil Cleanup at Solid Waste Management Unit 150 – Oct
- RCRA Facility Investigations at Solid Waste Management Unit 146 (Blivet Repair Facility) - Dec

2002

- RCRA Interim Removal Action for Six Oil Pits, Fiscal Year (FY) 2001, SWMU 149 Oil Pits – Jan
- RCRA Facility Investigation at 23 sites (Final Report) – Jan
- Interim Remedial Actions at SWMU 33 (Pesticide Mixing Area) – Feb
- RCRA Corrective Action for SWMU 145, Old Skeet Range – Feb
- Phase II Campbell Army Airfield Master RCRA Facility Investigation at Building 7154 (Hangar 3), Paint Spray Booth (at Building 7156), and Monitoring well CAAF-11 – Feb
- the completion of the RFI (23 sites) Report , Jan
- Phase IV RCRA Facility Investigation at CAAF for SWMU 41 – FCPB-38 - Nov

2003

- RI/FS at FCPB-26, 38, 43, 64
- IRA at FCPB-07, 26, 38, 49, 52
- RA (C) at FCPB-20
- RD at FCPB-38
- LTM at FCPB-47

2004

- RI/FS at FCPB-38
- IRA at FCPB-38
- RA(C) at FCPB-09, 10, 43, 49, 58
- LTM at FCPB-07, 26

2005

- RI/FS at FCPB-24, 38, 64
- IRA at FCPB-38, 52
- RA(C) at FCPB-10, 24, 43, 58
- LTM at FCPB-07, 26

2006

- RI/FS at FCPB-10, 38, 43, 64
- IRA at FCPB-38
- CMI(O) at FCPB-49
- LTM at FCPB-07, 09, 26, 58,

Projected Record of Decision (ROD)/Decision Document (DD) Approval Dates:
Unknown

Projected Construction Completion Date of IRP: 2011

Schedule for Next Five-Year Review: NA

Estimated Completion Date of IRP (including LTM phase): 2036

FORT CAMPBELL IRP SCHEDULE
(Based on current funding constraints)

AEDB-R#	PHASE	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+
FCPB-07,	LTM									
FCPB-09, SWMU 21	LTM									
FCPB-10, SWMU 28	RFI/CMS									
	CMI(C)									
	CMI(O)									
	LTM									
FCPB-002-R-01										
FCPB-002-R-01										
FCPB-24, SWMU 48	LTM									203609
FCPB-26, SWMU 2 & 4	LTM									
FCPB-38, CAAF	RFI/CMS									
	IRA									
	CMI(C)									
	CMI(O)									201509
	LTM									202109
FCPB-43, SWMU 140	RFI/CMS									
	CMI(C)									
	CMI(O)									
	LTM									
FCPB-48, SWMU 145	LTM									203609

FORT CAMPBELL IRP SCHEDULE
(Based on current funding constraints)

AEDB-R#	PHASE	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+
FCPB-49, SWMU 146	CMI(O)									
FCPB-52, SWMU 149	RFI/CMS									
	CMI(C)									
	CMI(O)									
	LTM									
FCPB-58, SWMU 153	LTM									
FCPB-64, SWMU 170	RFI/CMS									
	CMI(C)									
	CMI(O)									
	LTM									
FCPB-65, SWMU 171	RFI/CMS									
	CMI(C)									

Prior Years Funds

Total Funding up to FY04: \$39,382,000

Year	Site Information	Expenditures	FY Total
FY05	LTM (FCPB-07)	\$5,750	
	RA(C) (FCPB-10)	\$24,000	
	RI/FS (FCPB-24)	\$67,300	
	LTM (FCPB-26)	\$5,750	
	RI/FS (FCPB-38)	\$824,980	
	IRA (FCPB-38)	\$218,600	
	RI (FCPB-43)	\$18,200	
	IRA (FCPB-52)	\$199,470	
	RA(C) (FCPB-58)	\$32,000	
	RI/FS (FCPB-64)	\$46,700	
	RAB	\$24,960	\$1,467,710

Current Year Requirements

Year	Site Information	Expenditures	FY Total
FY06	LTM (FCPB-07)	\$6,000	
	LTM (FCPB-09)	\$8,000	
	RI/FS (FCPB-10)	\$10,000	
	LTM (FCPB-26)	\$12,000	
	RI/FS (FCPB-38)	\$321,434	
	IRA (FCPB-38)	\$175,170	
	RI/FS (FCPB-43)	\$16,000	
	CMI(O) (FCPB-49)	\$4,000	
	LTM (FCPB-58)	\$12,000	
	RI/FS (FCPB-64)	\$58,660	
	RAB	\$25,000	\$623,264

Total Funding up to FY06: \$41,472,974

Total Future Requirements: \$12,149,000

Total IR Program Cost (from inception to completion of the IRP): \$53,621,974

FORT CAMPBELL

Kentucky

MILITARY MUNITIONS RESPONSE PROGRAM

AEDB-R SITES/SITES RC: 7/0

AEDB-R SITE TYPES:

1 Small Arm Ranges
6 Unexploded Munitions/Ordnance

CONTAMINANTS OF CONCERN: Unexploded Ordinances (UXO), Discarded Military Munitions (DMM), and Munitions Constituents (MC).

MEDIA OF CONCERN: Groundwater, Soil, Sediment, and Surface Water

COMPLETED REM/IRA/RA: None

IDENTIFIED POSSIBLE REM/IRA/RA: RA at FCPB-002-R-01, FCPB-003-R-01, FCPB-004-R-01, FCPB-005-R-01, FCPB-006-R-01

TOTAL ER,A FUNDING:

Prior Year	\$25,000
Current	\$329,000
Future	\$13,470,000
Total	\$13,824,000

DURATION OF IRP:

Year of MMRP Inception:	2003
Year of RA Completion:	2017
Year of MMRP Completion:	2047

MMRP Contamination Assessment

MMRP Contamination Assessment Overview

The Phase 3 Army Range Inventory was completed at Ft. Campbell in November 2003. The inventory identified seven sites as eligible for the MMRP. The Phase 3 Inventory serves as the Preliminary Assessment under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). A Site Inspection is scheduled in FY06.

MMRP Cleanup Exit Strategy:

Currently there are seven sites listed under the Ft. Campbell MMRP program. Six of the seven sites are scheduled for a RI/FS in 2012. The remaining site is expected to receive NFA approval in 2006 after a site inspection has been performed. No off-post contamination or responses have been issued. No complicating factors or uncertainties have been identified.

2003

- Closed, Transferring and Transferred Range Inventory Report, Nov

FORT CAMPBELL
Kentucky
**MILITARY MUNITIONS
RESPONSE PROGRAM
SITE DESCRIPTIONS**

FCPB-001-R-01

18TH STREET CONFIDENCE COURSE - TN

SITE DESCRIPTION

The closed 18th Street Confidence Course, also known as Range 15, was located in the northeast corner of the intersection of Air Assault (formerly 18th Street) and Market Garden (formerly Range Road) near the west-center edge of the cantonment area and occupies about 1.96 acres. The course was used for training from 1943 through 1960. No information regarding response actions or munitions types was available on this range, but typical munitions used on other Army confidence courses include practice ordnance, smokes, and simulators. This site is currently undeveloped.

CLEANUP STRATEGY

A SI is planned in FY06. NFA is anticipated.

STATUS

REGULATORY DRIVER: CERCLA

RAC: 4 Low Risk

CONTAMINANTS OF CONCERN:
MEC

MEDIA OF CONCERN: Soil,
Groundwater, Sediment, Surface
Water

Phases	Start	End
PA	200304	200311
SI	200510	200609

RC DATE: 200609

FCPB-002-R-01

LUCAS ELEMENTARY SCHOOL DMM SITE - TN

SITE DESCRIPTION

This DMM site was encountered by construction activities near the Lucas and Jackson Elementary Schools located near the corner of Airborne Street (formerly 11th Street) and Indiana Avenue in the south-central part of the cantonment area. DMM was encountered during 1996 and 1997 at several times during construction in a 1.96-acre area. Items found were MKII HE hand grenades, smoke grenades, 2-lb TNT, C-3 explosives, small arms rounds, 60mm and 81mm mortar rounds, 2.36-in. rockets, training grenades, booby traps for landmines, M2 antipersonnel mines, and M21 practice landmines. These were believed to be informal and unrecorded disposals. Dates of burial are unknown, but 2.36-in. rockets were obsolete by the end of the Korean War. All items were cleared. No additional restoration activities have been carried out in this area. The area is currently developed with private residences and schools.

CLEANUP STRATEGY

Perform SI followed by RI/FS (OE site characterization, removal assessment), excavation; OE removal action and monitoring.

STATUS

REGULATORY DRIVER: CERCLA

RAC: 1 - High Risk

CONTAMINANTS OF CONCERN:
UXO, DMM, MC

MEDIA OF CONCERN: Soil,
Groundwater, Sediment, Surface
Water

Phases	Start	End
PA	200304	200311
SI	200510	200609
RI/FS	201110	201109
RD	201510	201609
RA(C)	201610	201709
LTM	201710	204709

RIP DATE: 201709
RC DATE: 201709

FCPB-003-R-01

MORTAR RANGE 6/11 - TN

SITE DESCRIPTION

The closed Mortar Range 6/11 is on the east side of Market Garden (formerly Range Road) 0.4 mile north of the intersection of Market Garden with Air Assault (formerly 18th Street), and just south of the sanitary landfill. This area is on the west side of the cantonment area. Mortar Range 6/11 is shown as Range 6 on a 1953 map and as Range 11 on a 1971 map. The ASR also notes that it was labeled as Range 7 on one map. According to the ASR, it was active from the early 1950s through at least the early 1970s. Air photos of this area from 1945 show numerous tank trails. Mortar Range 6/11 is not shown on a range map from 1977. Firing was oriented to the east (firing to east would be towards the cantonment area). The range fan shown on the 1971 Range and Training Area Map is approximately 900 ft long, and was estimated to occupy 40.7 acres. It is likely that only inert (practice) 60mm and 81 mm mortars that may have contained spotting charges were used at this site. The site is currently undeveloped. There have been no environmental restoration activities at this site.

STATUS

REGULATORY DRIVER: CERCLA

RAC: 4 - Low Risk

CONTAMINANTS OF CONCERN:
MEC

MEDIA OF CONCERN: Soil,
Groundwater, Sediment, Surface
Water

PHASES	Start	End
PA	200304	200311
SI	200510	200609
RI/FS	201110	201109
RD	201510	201609
RA(C)	201610	201709
LTM	201710	204709

RC DATE: 201709

CLEANUP STRATEGY

Perform SI followed by RI/FS (OE site characterization, removal assessment), excavation; OE removal action and monitoring.

FCPB-004-R-01 RANGE 28 - TN

SITE DESCRIPTION

Range 28, also known as Range Estimation, was northeast of, and separated by a drainage ditch from, Mortar Range 6/11 on the west side of the cantonment area. It is a 6.5-acre area used to train troops in estimating ranges for small arms fire. The range is oriented north-south, but maps do not show a large fan. Air photos discussed in the ASR show berms in the south portion of this range. Likely munitions are small arms. Range 28 appears on some maps and air photos from the 1950s, but is not apparent prior to 1950, and is apparently abandoned in 1963 air photos. The area is designated as a sanitary landfill on more recent maps. This site is not included in the environmental restoration program and no UXO response actions are known to have occurred.

CLEANUP STRATEGY

Perform RI/FS followed by removal assessment; remedial investigation, excavation, OE removal action.

STATUS

REGULATORY DRIVER: CERCLA

RAC: 5 - Negligible Risk

CONTAMINANTS OF CONCERN:
MEC

MEDIA OF CONCERN: Soil,
Groundwater, Sediment, Surface
Water

Phases	Start	End
PA	200304.....	200311
RI/FS	201110.....	201109
RD	201510.....	201609
RA(C)	201610.....	201709

RC DATE: 201709

SITE DESCRIPTION

Range 42, also known as Mines and Booby Trap Range, was located just east of the Werner Park Housing Area in the south-central part of the cantonment area. This range is shown as a 3.24-acre area between Bastogne Avenue (formerly Ohio Avenue) and West Coal Avenue, on the south side of Airborne Street (formerly 11th Street) on the 1953 Range and Training Area Map. The Final Environmental Assessment for the Residential Communities Initiative for Ft. Campbell, Kentucky (February 2002) and the Environmental Baseline Survey for the Army Residential Communities Initiative for Ft. Campbell, Kentucky (January 2003) place Range 42 in the southwest corner of Bastogne Avenue and Airborne Street (also known as 11th Street), but this appears to be a misinterpretation of the ASR maps. The ASR indicates that Range 42 was active from about 1953 through 1956. No information concerning the munitions used on this range was available, but simulators are likely. This site is not included in the environmental restoration program. The site currently has ground improvements (roads, buried utilities).

STATUS

REGULATORY DRIVER: CERCLA

RAC Score: 3 - Moderate Risk

CONTAMINANTS OF CONCERN:
MEC

MEDIA OF CONCERN: Soil,
Groundwater, Sediment, Surface
Water

Phases	Start	End
PA	200304	200311
SI	200510	200609
RI/FS	201110	201109
RD	201510	201609
RA(C)	201610	201709
LTM	201710	204709

RC DATE: 201709

CLEANUP STRATEGY

Perform SI followed by OE Site Characterization and removal assessment, remedial design, OE Removal Action and monitoring.

FCPB-006-R-01

TRAINING RANGE 1 & 1A - TN

SITE DESCRIPTION

This closed training range is the site of the Gardner Hills Housing Area in the extreme southeast part of the cantonment area. It covers 645.2 acres. Training Range 1 and 1A was used from 1944 through 1956 as a training and maneuver range. The ASR notes that UXO has been found in the undeveloped parts of the Gardner Hills area. The UXO discovered included five training landmines and one practice 250-lb bomb. These items were disposed of after being destroyed. There has been no environmental restoration activities carried out in this area. Private residences occupy a portion of this area. The remaining portions of this range are undeveloped.

CLEANUP STRATEGY

Perform OE site characterization and removal assessment followed by remedial design, OE removal action and monitoring.

STATUS

REGULATORY DRIVER: CERCLA

RAC: 3 - Moderate Risk

CONTAMINANTS OF CONCERN:
MEC, UXO

MEDIA OF CONCERN: Soil,
Groundwater, Sediment, Surface
Water

Phases	Start	End
PA	200304	200311
RI/FS	201110	201109
RD	201510	201609
RA(C)	201610	201709
LTM	201710	204709

RC DATE: 201709

FCPB-007-R-01

WERNER PARK HOUSING AREA DMM SITE - TN

SITE DESCRIPTION

DMM has been found at a construction site in the Werner Park Housing Area at the intersection of Airborne Street (formerly 11th Street) and Mississippi Avenue in the south-central part of the cantonment area. No acreage or map of the area was available, and this site has been assumed to cover 0.02 acres. Contractors excavating a utilities ditch encountered 20 unfuzed 81mm HE mortar rounds buried in the soil. In 1996, these were removed and destroyed, and a survey of the area by US Army Engineering and Support Center, Huntsville personnel did not identify any other DMM in the area. This site is thought to have been used for a one time informal and undocumented burial, and the date of burial is unknown, but likely to have occurred between 1943 and 1970. The site is part of a housing area. No further cleanups have been done at this site.

STATUS

REGULATORY DRIVER: CERCLA

RAC: 2 - Serious Risk

CONTAMINANTS OF CONCERN:
DMM

MEDIA OF CONCERN: Soil,
Groundwater, Sediment, Surface
Water

Phases	Start	End
PA	200304	200311
SI	200510	200609
RI/FS	201110	201109

RC DATE: 201209

CLEANUP STRATEGY

Perform SI followed by OE Site Characterization and Removal Assessment.

Initiation of MMRP: 2003

Past Phase Completion Milestones

2004

- PA CTT Range Inventory Report

Projected ROD/DD Approval Dates: 2012

Projected Construction Completion: 2017

Schedule for Five Year Reviews: None Scheduled

Estimated Completion Date of MMRP (including LTM phase): 2047

FORT CAMPBELL MMRP SCHEDULE

(Based on current funding constraints)

AEDB-R#	PHASE	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+
FCPB-002-R-01	RI/FS									
	RD									201609
	RA(C)									201709
	LTM									204709
FCPB-003-R-01	RI/FS									
	RD									201609
	RA(C)									201709
	LTM									204709
FCPB-004-R-01	RI/FS									
	RD									201609
	RA(C)									201709
FCPB-005-R-01	RI/FS									
	RD									201609
	RA(C)									201709
	LTM									204709
FCPB-006-R-01	RI/FS									
	RD									201609
	RA(C)									201709
	LTM									204709
FCPB-007-R-01	RI/FS									

Prior Years Funds

Total Funding up to FY04: \$25,000

Year	Site Information	Expenditures	FY Total
FY05		None	\$0K

Current Year Requirements

Year	Site Information	Expenditures	FY Total
FY06	Installation-wide MMRP SI	\$329,000	\$329,000

Total Funding up to FY06: \$354,000

Total Future Requirements: \$13,470,000

Total MMRP Program Cost (from inception to completion of MMRP): **\$13,824,000**

FORMATION OF THE RAB: In November 1995, Ft. Campbell solicited for members of the surrounding community who may be interested in participating on a Restoration Advisory Board (RAB). Tennessee and Kentucky residents were encouraged to attend a RAB orientation meeting held in February 1996 in Clarksville, TN. Adjacent landowners, local environmental groups, local college professors, mayors and other officials, members of the local Chambers of Commerce, and select individuals recommended to the Environmental Division were invited to the orientation meeting by direct mail. Newspaper advertisements, television announcements and flyers in community libraries were additional methods used to announce the formation of Ft. Campbell's RAB.

After the orientation meeting was held, interested community members were asked to complete an application, a biographic information form and a demographic information form. These forms were reviewed and the Environmental Division made a decision to seek more members of the community to diversify the group of applicants. Solicitation efforts were made through the Equal Employment Opportunity Office on Ft. Campbell, an Earth Day program in Clarksville, school principals in the four counties of Ft. Campbell, and through town officials from areas where no representation existed in the current group of RAB applications. A second orientation meeting was held in Hopkinsville, KY in May 1996.

RAB MEMBERSHIP: The RAB was officially formed on June 11, 1996 and included five members from Ft. Campbell, two Kentucky state representatives, two Tennessee state representatives, one EPA representative and fifteen members of the surrounding communities. Although a few community members of the RAB have resigned due to other commitments, the strength of the membership has been maintained. From June 1996 to 2003, the RAB held monthly meetings of approximately two hours in length. In 2003, the RAB voted to begin meeting quarterly.

RAB TRAINING: All RAB members receive an updated handbook annually, which includes general RAB and membership information, as well as, a description of all the restoration sites. The RAB received training through presentations on risk assessment, karst geology, a general overview of the Army Environmental Restoration Program and regulatory agencies, funding information, RCRA & CERCLA terminology, an Installation Action Plan overview, and groundwater characterization. They have also been briefed on Ft. Campbell's high priority sites, the 23 sites listed in the RCRA Facility Investigation and 12 sites listed in the 1996 RCRA Facility Assessment.

RAB ACTIVITIES: The RAB continues to review and provide questions and comments on the continued investigation and remediation phases of IRP sites. Representatives of the RAB are invited to participate in the annual Installation Action Plan meeting. Several times during the year, the RAB visits those installation SWMUs under investigation/remediation.

PROJECTIONS FOR THE RAB: Over the next year, the members will be closely involved in the progress of work at Campbell Army Airfield. As documents are produced, they will be asked to review them and provide feedback. They will also continue to weigh risk factors of groundwater contamination against cost benefits of site restoration and remediation.